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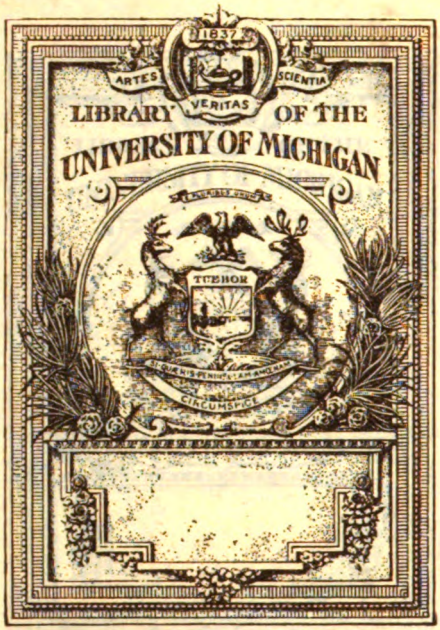

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1921.

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No. 25. A school building program for Athens, Ga. Alice B. Fernandez.
No. 26. Educational survey of Elizabeth City, N. C. W. T. Bawden.
No. 27. Training for foreign service. Glenn L. Swiggett.
No. 28. Educational survey of Wheeling, W. Va. W. T. Bawden.
No. 29. Monthly record of educational publications, September, 1921.

(*Continued on page 3 of cover.*)

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DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

BULLETIN, 1921, No. 27

TRAINING FOR FOREIGN SERVICE

COMPILED BY
GLEN LEVIN SWIGGETT
SPECIALIST IN COMMERCIAL EDUCATION

WASHINGTON
GOVERNMENT PRINTING OFFICE
1922

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FOREWORD.

The articles contained in this bulletin on foreign-service training were assembled nearly three years ago. They were contributed by specialists, and deal with subjects which should be included in a fully developed major on foreign-service training for Government, business, social welfare, etc. These articles include, in addition to brief bibliographies of textbooks serviceable for use in college and of other books that may be helpful to general readers, the writers' opinions in regard to the subject matter, the limitation and manner and presentation of this subject matter, its coordination with similar related subjects and amount of time that should be given to it in college and the semester or semesters with college year when it can be best offered. This bulletin is to serve two purposes; it should assist colleges to plan an adequate course of instruction on training for foreign service, and should enable university men now in the field of business to plan for a systematic reading course (Cf. Reading course in foreign trade, Reading course No. 17, Home Education, U. S. Bureau of Education, prepared by Glen Levin Swiggett). Much is naturally left unsaid in this bulletin, but what is said is for the most part brief, vital, and to the point.

Unavoidable delays have prevented the earlier publication of this bulletin. The publication of these articles now, however, is timely. The statistics reported to this bureau for use by the Committee of Fifteen on Educational Preparation for Foreign Service, appointed by the United States Commissioner of Education, have registered since 1916 a steady growth in our higher institutions on the subject of educational preparation for foreign service, for commerce in particular. In October, 1921, the bureau reported courses of study in preparation for foreign service in 70 colleges and universities. Of the 70 higher institutions in which this special training was offered at that time, the 10 highest reported each more than 100 students taking foreign trade, a total enrollment for the 10 institutions of 2,255 students. In Commercial Education Circular No. 7, Bureau of Education, is printed a list of the 70 institutions offering some kind of training for foreign service.

The technique of foreign trade, skill in the actual transaction involved in merchandising, shipping, and financing should be strengthened by an understanding of the principles of commerce, of transportation, and banking; of motives that determine human conduct in social relationships; of Governmental regulations and policies. Courses on practical exporting, therefore, should be supplemented with ample opportunity for the study of the modern languages, the social and commercial sciences, etc.

The variety and character of instruction now being offered as preparation for foreign trade in our larger universities warrant the publication of a bulletin of this character. It is the belief of the compiler that these articles will stimulate still further the marked educational response to the demands of business for a trained and informed personnel in the conduct of our foreign service of Government, business, etc. And this variety and higher type of instruction

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for foreign-service training now offered in our colleges and universities is noted with increasing satisfaction by the Advisory Council and Committee of Fifteen on Educational Preparation for Foreign Service, in consideration of the many angles of approach to world trade, and the high level of intelligence, of vision and character, of skill and information essential to its prosecution by an individual corporation or nation.

GLEN LEVIN SWIGGETT,
Chairman, Committee of Fifteen on Educational Preparation for Foreign Service.

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TRAINING FOR FOREIGN SERVICE.

PART I. ECONOMICS.

COMMERCIAL ORGANIZATION FOR FOREIGN TRADE.

By C. S. DUNCAN,

Assistant Professor of Commercial Organization in the School of Commerce and Administration, University of Chicago.

Introductory.—Foreign trade is domestic trade carried beyond the national boundaries. In all fundamental respects the principles are the same for both; in many incidental features they differ materially. In foreign trade as in domestic trade there are goods on their way to market; in both instances trade is carried on for profit, business is on a pecuniary basis; in both there are producers, consumers, and middlemen; in both there are markets for buyers and sellers, market prices, trade news, advertising, exchanges, transportation, warehouses, financial organization, and all other business paraphernalia. These things may sometimes appear in foreign trade disguised by different names, but in all essential respects they are the same.

The differences, however, are important. Many businesses have made the mistake of treating the foreign market as they treat the home market. In doing so they have overlooked the differences that often count for so much in trade. One of the most obvious distinctions lies in the language used; any extensive foreign trade will necessitate the use of a foreign tongue. While business between countries runs on a monetary standard, the units differ in name and value. There is the question of tariff; of a foreign jurisdiction. There is the matter of business habits and customs, of illiteracy, of purchasing power; there are new and important factors in the trade organization, such as the commission house, the forwarding agent, or the comprador of China.

It seems logical, therefore, that domestic and foreign trade should be closely related in every curriculum. And since the two subjects go hand in hand so great a part of the way, the latter might well follow the former, as rounding out the trade analysis. The student will grasp far more readily the principles of foreign trade if he understands thoroughly the principles of domestic trade. The mechanism of foreign exchange will not seem so strange after the mechanism for domestic financing is mastered. There is, nevertheless, enough material that is distinct in the organization for transacting foreign business to constitute a special study.

Content of courses in commercial organization for foreign trade.—There are three parts to every kind of trade analysis: (1) A study of the commodity or commodities; (2) a study of the market; and (3) a study of the trade organization for carrying the goods to market.

It must follow, therefore, that an intelligent understanding of the trade organization presupposes a knowledge of the goods and the market. Commercial organization, after all, is not a fixed, unchangeable thing; it is a way of doing things by men who desire to attain a result most expeditiously and economically for themselves. However bound by tradition and custom, this economic mechanism is affected constantly by the thinking and the strategy of countless alert and eager minds that are seeking better ways of doing things.

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1. *Surplus for export.*—The first problem that presents itself, then, is the kind of commodities that are available for export. The character and quantity of these goods will depend upon natural resources and manufacturing capacity of the country and upon the general policy of the country as to whether it is willing to send out raw materials or is engaged in developing its fabricating facilities. An understanding of this subject demands a knowledge of commercial geography first of all. If such knowledge can be presumed, then the groundwork is already laid for the course. It will be wise, in any case, to take up this subject even if only in review.

2. *Markets.*—If there are goods available for export, the problem immediately arises of finding a market for them. This is the next subject for study in a course on commercial organization for foreign trade. An analysis of foreign markets will involve an examination of character of the people, their standards of living, their trade habits and customs, their purchasing power, what they produce for their own consumption, what they need from abroad. All sources of information on these subjects should be canvassed. The needs of these peoples for our surplus goods, both existing and prospective, will be surveyed. There will be the question, also, of competing and supplementary goods. There is the difficult matter of adapting our goods and our productive capacity to foreign demands. A market is after all only a chance to sell, if possible at a profit; it is a demand for goods backed up by purchasing power, i. e., effective demand. This is what the merchant and manufacturer, both foreign and domestic, are seeking.

3. *Trade organization.*—What kind of organization has arisen to carry these available goods to the foreign market? The analysis of this organization should constitute the backbone of the course. For convenience of discussion this study will fall naturally into two parts: One of these will be the organization within the United States and on the sea for handling goods destined for a foreign market, the other will be the organization in the foreign country for receiving and distributing these goods.

(*a*) Methods of contact: An early step for the merchant or manufacturer in marketing is the getting into contact with the prospective buyer. This is just as true of foreign trade as of domestic trade. There are many ways of doing this, some far more effective than others. One may try to make contact with his market through the mail, either by catalogue, by advertisements, or by sales letters, etc. If the business justifies the expense, either singly or through a combined sales organization under the provisions of the Webb bill, a salesman may be sent. Contact may be had through exhibitions or other means of showing samples. A descriptive analysis should be made of all methods of contact.

(*b*) The commission house: The foremost figure in the commercial organization for foreign trade in the past has been the commission house. What economic services this middleman performs, whether his power increases or diminishes, what his elements of strength and what his weakness, are necessary subjects of study.

(*c*) The forwarding agent: There is, too, the work of the forwarding agent. He may be merely a collector of goods from many small sources into carload lots in order to obtain lower rates. These goods may pass into the hands of a commission house at the port. Or the forwarding agent may do more than take from the manufacturer the worry and bother of making out documents, securing shipping space, and collecting against documents. He may become the foreign department of the exporter, acting in his name and identifying

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himself in all respects with the interest of his principal. This specialized middleman should be studied in all the different attitudes that he assumes.

(*d*) The export department: As foreign business increases in volume, it may become advisable to organize a special foreign department in the business. Methods of organization, training, and equipment for the management of a foreign department are subjects for investigation. Many large businesses in the United States have aggressive and effective foreign trade departments that have been able to meet successfully their most powerful, adroit, and skilled competitors.

(*e*) Foreign sales organization: Under the Webb Act that became a law in April, 1918, it is possible for American manufacturers to combine in organizing a sales department to handle their export business. The new development in foreign policy in the United States may have far-reaching consequences. It deserves careful examination.

(*f*) Transportation: There is also the subject of transportation to be taken up. A course in foreign trade should include a detailed study of shipping documents. The ocean bill of lading, the insurance certificate, the consular invoice, and any other special papers that shippers are required to make out should be actually handled by the students until they are familiar with them. The measurement of shipping space and the buying and selling of space are also pertinent subjects.

(*g*) Foreign distributing organization: The student should be taught something of the commercial organization in the foreign country. The indent merchant, the comprador, the foreign jobber, the foreign retail merchant, whoever is influential in guiding the course of commodities into and out of foreign lands, is a character in the story of foreign trade.

4. *Foreign exchange.*—The best place to take up the subject of foreign exchange is in connection with a study of foreign trade organization. In this way it is possible to show the service performed by the bills of exchange. These should be studied with all the documents attached until they are no longer a mystery. Then the question of exchange rates may be taken up.

5. *Merchant marine.*—It is unavoidable to meet with the problem of a merchant marine in making a survey of foreign trade. In these latter days this is so interesting a subject that there is no difficulty in giving it a place in the course.

6. *Tariff.*—The foreign trade policy is inevitably affected by the tariff policy. This question arises in the foreign trade course, not as a political problem, but as a commercial problem, and should be discussed from that angle. A new point of view may be had by looking at tariff walls throughout the world, and by observing how the flow of trade is stopped or diverted by this means.

7. *Marine insurance.*—Some place should be given in the course in foreign trade to the subject of marine insurance. This survey ought to cover both the perils of the sea and the war-risk insurance. There is also the question of the Government's share in the risk as compared with that of private companies. The cryptic technical terms, such as "general average," "free from particular average," etc., should be explained.

8. *The future of foreign trade for United States.*—The study of foreign trade problems ought to lead to some conclusions as to the future foreign trade of the United States. It might be well to include a detailed study of certain possible markets. This line of investigation may be followed as far as it seems practicable. In any case, the study will enable one to view more intelligently the proper development of foreign trade, the best markets to approach, the best methods to use in reaching a market, the best adjustment of supply to demand. One will also inevitably learn how to find out what he wants to know.

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The next best thing to knowing facts is to know where to find them. Some such course as has been indicated here will enable the investigator to work more intelligently on his foreign trade problem.

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INDUSTRIAL AND COMMERCIAL GEOGRAPHY.

By J. RUSSELL SMITH,
Professor of Economic Geography, Columbia University.

The place of geography in higher education is one of the miracles of the human mind. Our higher education is nearly always planned without any provision for knowledge of the earth in which we are to pass our mortal days.

Land is land, water is water, and with those two sweeping facts as the approximate total of world information, men have for centuries thrown themselves away for the want of a little geographic knowledge. Colonists, traders, missionaries, guided by ignorant faith, have planted themselves on inhospitable shores, where the colonies have shriveled, the traders have failed, and the missionaries have died—all for the want of the simple knowledge that should now be given in any high school or college course in geography.

Geography as a part of education has suffered greatly because of the fact that it led to no definite career. The chemist can get a job as a chemist, so chemistry gets quickly into our curriculum. The geographer, on the other hand, can rarely get a position as a geographer, despite the vital importance of this science as a part of the preparation for business, finance in the broader sense, citizenship, and foreign trade.

The business man, the financier, the trader, and the citizen need to be acquainted with the homeland and other lands as places in which man may live and make a living. This is a personally utilitarian value.

Geography has unappreciated cultural and social value as a part of general education. It is doubtful if any study rivals geography in its ability to serve as a foundation to so many other studies. History used to be the recorded antics of a few men. Now it is being interpreted more and more as movements, which are often little more than the attempts of men to adjust themselves to the factors of their geographic environment. Political economy and finance deal largely with industries and their developments, which in turn depend upon the resources and geographic conditions of certain parts of the earth's surface. It is high time we reached the end of the epoch when men will have to find out all these things for themselves, although carefully taught about the campaigns of Caesar, the development of medieval cities, the details of military history, or the platforms of parties as they tried to master some economic problem that had a geographic origin not mentioned in the chronicle.

We have now entered the era of world trade, and therefore necessarily of world thinking. It is difficult to think about things of which we know nothing. It is necessary for us to know something about the world in which we live,

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as a place in which to make a living. Why is one place good and another place bad? Where are the good places and where are the bad places? What are our relations to these different parts of the earth?

It is difficult to think of a kind of educated man who does not need large blocks of knowledge in this field. Certainly the lawyer, the financier, the factory manager, the importer, the exporter, the legislator, the farmer needs it. Even the divinity student needs it, if the missionaries of the church hope to make themselves effective in foreign lands, or even in other parts of their own country.

Good courses in economic geography should, from this time forward, become a part of the education of the man of general culture, as well as of special training. They should be alongside of history, literature, and foreign language, as well as accounting, transportation, business law, and the older sciences.

Arrangement of geography courses in a college curriculum.—A student needs two kinds of geography—first, general geography, and second, regional geography.

1. *General geography.*—Here he gets the tools of geographic understanding, just as the student of mathematics gets the tools of mathematical understanding, namely the power to add and subtract, multiply and divide. The man to whom the world shall be anything but a mysterious exterior, needs to know many things about climate, soil, land surface, that are applicable wherever these things appear. This is sometimes called systematic geography. There are two ways in which it may be taught. One, the simpler and the drier, is to give these tools of geography in an introductory course dealing with heat and cold, wind and rain, hill and plain, mountain, forest, soil, desert, swamp, etc.

2. *Regional geography.*—Courses dealing with particular parts of the world naturally follow this introduction. They may be divided somewhat as follows: United States and Canada, Latin America, Europe and Asia, Africa and Australia.

Any two of the last four may easily be taken simultaneously, thus snugly filling into a four-year course.

Another way, possibly more interesting, probably more difficult, of teaching the same material, is to intersperse the general geography with a regional study, as for example, the course on the United States and Canada, which may be made introductory by including nearly all of the climatic and general geographic knowledge necessary for the understanding of this region and other regions.

Bibliography, general.—After a student has had one or more courses in commercial and industrial geography, he will receive great benefit and showers of material if he will clip the commerce reports, from the Department of Commerce, Washington, and three or four such magazines as the Review of Reviews, World's Work, and Country Gentleman. If he develops specialties, they can be followed in Poole's Index to Periodic Literature, which covers the general field, and in the magazine, Industrial Management, which covers the more technical fields, but has a large amount of material of value to any student of geography.

The whole field of geographic literature is ably covered in the Geographic Review, published monthly by the American Geographical Society of New York. No person really interested in the subject should miss this journal.

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——— Industrial and commercial geography. New York, Henry Holt & Co., 1913. 914 p. This book is perhaps more philosophic than Chisholm, but contains fewer facts. It has chapters covering the leading industries, foreign trade, its routes and organization. These books are of college and university grade.
Newspaper almanacs, such as World Almanac, contain good collections of statistics at much less cost than the above.
Statesman's Year Book. New York, Macmillan Co. For ready reference; for knowledge of population, area, trade statistics, and governments of all parts of the world, this book has few rivals for convenience.
Yearbook of the United States Department of Agriculture. Free through your Member of Congress. Valuable collection of statistics of agricultural production in all countries.

BUSINESS ARITHMETIC.

By G. H. VAN TUYL,

Instructor in Business Mathematics, Extension Teaching, Columbia University.

Probably not less than 95 per cent of all mathematical operations, either in domestic or foreign trade, come under the general head of arithmetic rather than that of any other branch of mathematics. Accuracy and facility of arithmetical computation are, therefore, of prime importance to one engaged in any commercial enterprise. Not only should one be accurate and facile in handling arithmetical operations but he should have a thorough knowledge of the subject matter of arithmetic, so that, in the interpretation of problems, he may not only interpret correctly but he may not, at the same time, misapply the principles of arithmetic to the solution in hand.

Emphasis should, therefore, be first placed upon accuracy of calculation, and, second, upon facility of calculation.

These two topics may be considered together because each reacts upon the other, and increase in skill in either adds ability in the other.

How shall one become accurate and facile in making computations? There are one subjective and two objective phases in the process. The subjective phase has to do with the power of concentration. No one may hope to succeed in work of this kind who can not bring his complete and full attention to bear upon the work.

The objective phases have to do with repetition, or drill, and the application of simple, practical short methods of calculation. Other things being equal, the fewer figures one is required to make in a given calculation, the fewer will be the errors, and consequently the greater degree of accuracy. The detection and elimination of errors frequently take more time than was required for the original calculation.

Accuracy and facility of calculation are of little value in and of themselves if their possessor has not also the ability to interpret problems as they arise and apply thereto correct arithmetical principles. Hence one should be ready and accurate in interpretation of problems. Correct interpretation depends upon a wide general knowledge of business customs, together with an exact and definite knowledge of the principles of arithmetic and of mathematics. A general knowledge of commercial law, accounting, and economics is most important. A thorough knowledge of algebra is valuable.

A course of study should include thorough drill in the fundamental operations involving integers and common and decimal fractions. The efficiency of the calculator may be greatly increased by the application of the many short methods of handling these operations.

A study of the relation of numbers, or, as it is frequently expressed, of aliquot parts, should be made. The study of aliquot parts should in no wise be limited to those parts whose base is 100 (that is, 100 cents to the dollar, or to 100 per cent). The study should include aliquots of many numbers. The

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principle of aliquots may be advantageously applied to many numbers, and to many operations in multiplication and division. Simple interest calculations are best made by use of this principle.

Percentage must be mastered.

From percentage on through its applications the course should include those topics having to do directly with foreign commercial enterprise. Among the most important are the following:

Metric system of weights and measures and their English equivalents.

Foreign exchange, covering a knowledge of the coinage laws of the countries one deals with. Rates of exchange and method of handling same. Gold imports and exports. Effect of time on rates of exchange. Use of conversion, and interest and bill stamp tables.

Customs regulations of the United States and of countries dealt with. Methods of reckoning duties.

Equation of accounts.

Cash balance, by the United States, English, and French methods.

Compound interest, and applications to investments, present values, annuities, sinking funds, etc.

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COMMERCIAL PRODUCTS.

By C. W. WASSAM,
Assistant Professor of Commerce, University of Iowa.

A course which has received little attention on the part of the universities and colleges of the country, but one which should certainly now occupy a prominent place in our teaching of foreign trade is commercial products. Practically all of the textbooks upon the subject of commercial geography give some place to a special study of the product, but not as much as the importance of the subject warrants.

There are several very definite advantages in making the *product* the basis of your study, instead of the country or the region. In the first place, you get a world view of the subject, and it is much easier to secure a proper concept of the product when you are thinking of it in every country and the conditions necessary for its growth or manufacture, instead of making the country or the State, or the region, the basis, and thinking only of the product as secondary.

It is rather difficult to remember that in a certain part of the study of a certain country there was something important stated about a certain product, but if you make the product the basis of your study then all places having similar conditions will be able to produce the same things.

Another very important reason for making the product the basis of the study is that, with increased commerce of the future and the gradual breaking down of trade barriers, the student should be led to see that the country best adapted for the production of a given product should produce that thing. It

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is no longer an important question that the United States produces wheat, but what is the place of the United States in the world's production of wheat and in just what way can our production be changed to fit into the commerce of the world.

The study of forestry in the United States has become important in recent years, and the conservation of our forest supply is extremely necessary; but a more important question for the student of commerce is to have a world vision of forestry, and to know what Canada, Russia, Sweden, and other countries could do to meet any deficiency that we may have in our country in the future.

There is also a pedagogical reason for a course in commercial products. It is much easier to keep the attention of the student centered upon some concrete product and from this bring in other important factors than it is to have a country or a region for your basis of study. In the country or region your concept is so large and so complicated that it is difficult for the ordinary student to grasp it and to understand all the important relations. Take the question of climate as an illustration. If you simply teach climate as a part of the general knowledge that one should have of a country, as is often done, the student does not become very much interested, but if you are studying the question of sugar and the student is looking for a suitable climate for the production of sugar cane, you immediately have a concrete motive for knowing about the climate of that certain country. An excellent method used to show the relation between climate and the product is to have the student take an outline map of the world and shade all the countries that have a similar climate, then with another map shade the countries that produce a certain product and the similarity will be apparent at a glance.

At the University of Iowa the writer has found the commercial museum a great help in teaching commercial products. An attempt has been made to collect in the museum samples of the different products in all the different stages of their manufacture or growth. By this concrete method of instruction the students get a very definite idea of the particular product which is being studied. With this definite idea in mind it is easy to bring into the study many other important facts, such as transportation, marketing, conditions necessary for growth or manufacture, and other similar facts.

Some of the more important points which should be considered in the study of an articles of commerce are: History of the product; conditions necessary for growth or manufacture, like climate, soil, raw materials, labor supply, capital, etc.; total world's production, and production by separate states or countries; importance in comparison with similar articles; international trade; methods used in marketing; by-products; and future of the industry.

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BUSINESS ENGLISH.

By GEORGE BURTON HOTCHKISS.
Professor of Business English in New York University.

Only recently has the subject of business English begun to be recognized as a proper part of school and university training for foreign trade and other fields of business. It is making headway rapidly, however, because the usual course in English composition has not paid much attention to letters, reports, and the other kinds of messages commonly used in business. Some special study of these forms, with practice in their use, is obviously desirable during the period of educational preparation, and the business man rightly expects it of those who enter his employ.

Although the subject of business English is too new to be standardized, there is at least an agreement that its requirements differ from those of literary English composition sufficiently to warrant a separate place in the curriculum. There is also a general agreement as to the fundamental differences and the method of treatment needed.

Business English is distinctly a utilitarian art, practiced for profit. Its ideals are the strictly business ideals of efficiency—maximum results at minimum expenditure. Unfortunately, this has too often meant simply an attempt to reduce production costs. There is a growing tendency now to consider the letter as a producer rather than a product, and to give more attention to the task of increasing its resultfulness. Resultfulness, too, is being regarded not merely as direct response, but the more indefinite but invaluable *good will* of the reader. Business English is more than businesslike English; it is business-building English.

On this simple conception, simpler perhaps in theory than in practice, the whole structure of business English is built. The study itself properly includes three main divisions—principles, technique, and methods.

The first and most essential principle is that business English is less a matter of good expression than of good impression; hence should be written from the reader's viewpoint. Economy of his time and energy is necessary. This involves proper adaptation of the substance and style of the message to the reader's viewpoint, character, and mood. This requirement, to be sure, is not peculiar to business English, but in business English the requirement is more important and more apparent than elsewhere. It assumes special importance in correspondence with foreign firms, whose ideas and ideals sometimes differ radically from those of American business men.

The second main division—technique—includes a careful examination of all structural details, including paragraphs, sentences, and words. These are matters requiring constant revision, even with those whose early training has been thorough. They should be studied as means to an end, rather than as rules to be followed. Business English has also certain differences in requirements, notably in such matters as length of paragraphs and sentences, and in vocabulary.

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In the third division—methods—the student really enters the study of business transactions. Business English is literally one-half business. There is nothing more fruitless than to write for the sake of writing. Training in business English, therefore, must give some understanding of the ordinary business situations that require letters, and some knowledge of the suitable method of procedure. Right substance is in business English a preliminary to good style. It has been found in teaching the subject that if the student secures a fair knowledge of the methods that are best adapted to the accomplishment of his purpose, and has the right viewpoint toward his reader, development of good style comes naturally and easily.

A large amount of practice is absolutely essential in a business English course. Such practice should be in the form of solving business problems rather than merely writing letters. The problem states a typical situation which must be handled in such a way as to win the favorable response of the reader and at the same time maintain or restore his good will. There is some advantage in requiring that a part of this practice work be done in the classroom within a limited time. In actual business, writing must often be done under pressure, and it has proved helpful to apply that pressure during the period of training.

The degree of success in training students in business English depends not a little upon the kind of criticism given by the instructor. This should not overemphasize details of form to the neglect of the more vital considerations of substance, attitude, and tone. Wherever possible, criticism should be constructive and accompanied by specific examples that show the student how a much better impression could have been secured by different handling. The oral practice of dictating letters aloud is valuable, not only for the confidence it gives, but also for the opportunity it affords to develop speaking ability.

There are certain handicaps to the teaching of business English. In the first place, most of the instructors at the present time have to be taken from the ranks of the academically trained. Their traditions have usually not been the traditions of the business man, either in aims and methods, or in standards. Before they can teach effectively, it is necessary for them to discover how business men actually use English. Nor can they rest content with that. The average business letter is not more than 50 per cent efficient, and the teacher can not safely take at random letters even from good business houses as fairly representative of the ideals to be sought. He must analyze, weigh, and compare letters, and also get figures about results. In point of fact, business men themselves have been eagerly searching for ways to improve the quality of their letters and those of their employees. Thousands of them are to-day studying business English through the use of textbooks and extension and correspondence courses.

At the present time the list of textbooks available in the field is somewhat limited, and the majority of these were written primarily for high school rather than university and college purposes. Some of them, however, are equally suitable for the higher schools, and the list will no doubt be rapidly extended.

Another handicap is the difficulty of putting in the hands of students an adequate body of specimens of good letters and reports. Specimen books of exposition, narration, and the like are of well-recognized value in the teaching of college composition. Specimen books in business English will no doubt make their appearance in the near future and prove of equal assistance.

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ADVERTISING AND SALESMANSHIP.

Outline of Practice Work in Technique of Business Courses at Columbia University.

By GUY RICHARD HUBBART,

Lecturer on Advertising, Columbia University.

Courses in advertising and salesmanship have been established at Columbia University for several years. They are given in the school of business and the division of extension teaching.

Aim and purpose.—From the start the primary aim has been to give students a firm grounding in the fundamentals of advertising and selling, and practice

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in the application of principles to definite sales and advertising problems. A secondary aim has been to give students an accurate viewpoint regarding the use and value of advertising and selling as factors in the distribution of goods.

In accordance with the above aims a method of instruction has been developed which takes into account the special needs of three types of students: Those with no acquaintance with business, the purely academic student; those who have had experience in other than the advertising or sales department of a business house; those who are employed as juniors in the advertising or sales departments.

Scope and method.—Instruction includes the study of merchandising, to give the student a definite understanding of goods; advertising, to enable him to tell the story of the goods he has to distribute; salesmanship, to ground him in the value of selling principles and methods; sales management, to give him a firm grasp of the methods of organizing and managing forces of salesmen. Instruction in advertising covers all phases of national, trade, technical, and specialty advertising; instruction in salesmanship covers all phases of retail, wholesale, and specialty selling. A third of the time involved in instruction is devoted to the presentation of sound theory; a third is devoted to the study of principles and their direct application to specified problems in selling and advertising; a third is devoted to actual practice, in so far as this is possible in an academic environment, and to special lectures on certain broad phases of business practice.

Special value of training.—Business men are awakening to the pressing need of better selling, more efficient personal effort on the part of individual members of the sales force, because efficient selling means more productive selling at the same or less cost.

Increased efficiency must have its basis in elementary training which embodies the spirit as much as the principle of modern business practice. It is here that academic training can best benefit the future employer of young women and men, especially if the instruction and training are given by men of broad practical experience who are in business and who are not out of touch with youth.

It costs the average business house as much to train a man for a position requiring creative and constructive ability as the first year's salary is worth; and that means preliminary training, the training requisite for holding a position merely, to say nothing of measuring up to its requirements.

University courses in business really fit men for the beginning of their future growth and usefulness in business activities. The training is of much greater value than an equal number of years of apprenticeship minus the academic training, except, of course, in purely mechanical pursuits. The theory, once held by a certain type of employer, that four years of practical work is better for a salesman than an equal amount of special training under capable instructors is frayed out. This, because practical training alone gives only practice, while practice plus broadened outlook and accurate viewpoint, such as only specialized training gives, is what makes the young worker in business efficient in the real sense.

This point of view is kept constantly in the foreground in the instruction given at Columbia University in the courses in merchandising, advertising, salesmanship, and sales management.

Textbooks are used sparingly, but reference works by the leading business writers are used to supplement lectures and practice work.

A national need.—Educators would do well to encourage the popular presentation of accredited courses in business practice through the pages of newspapers, much in the same way that courses in domestic science, physical culture, and comic features are exploited. This would do much to impress the average business man with the value of special training, and it would put before the future

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applicant for business positions the need for thorough training as a preparation for practical work. Ten years ago such a thing would have been impracticable, due to the lack of sound methods of instruction. To-day it is as feasible as it is practical, in view of the fact that universities, colleges, and even business institutions of a progressive type have developed capable men and evolved methods of unquestioned merit.

ECONOMIC HISTORY OF THE UNITED STATES.

By E. L. Bogart,
Professor of Economics, University of Illinois.

The subject "Economic history of the United States" is prescribed for those students who take the course in foreign commerce at the University of Illinois. This indicates in part the importance which is here attributed to this subject. Personally, I regard such a subject as fundamental in preparation for general business or more specifically for foreign trade and foreign service of the Government. The necessary background of fact and of historical development in the growth of the Nation's industries, commerce, agriculture, and other fields of enterprise are here secured. Especially valuable in such a training is the gaining of proper sense of historical perspective, which enables the student to discriminate between events of ephemeral and those of permanent importance, to place things in their proper relations to each other, and to discern the direction of present-day movements. An analysis of trade conditions would gain immensely in value if it were based upon a thorough knowledge of the past; indeed, if the writer lacked this knowledge he might easily draw erroneous inferences and make an incorrect analysis. For the American student of foreign commerce not merely is an acquaintance with the history of commerce in the narrow sense desirable, but also a thorough comprehension of the growth and development of our agriculture, mining, forestry, and fisheries, of our manufactures, tariff legislation, transportation, and banking, and of the organization of capital and labor. The economic history of the United States is not an isolated phenomenon, but throws valuable light upon the march of events in countries, like those in South America, which are now passing through similar stages of industrial development.

In the University of Illinois the course in economic history of the United States is given in the second semester of the freshman year. It is preceded by a course on economic resources and is followed in the sophomore year by the usual course in principles of economics. It does not seem desirable to let first-year students take the last-named subject, but those who register for the business or commercial curricula are eager to have some economics from the beginning. In the course in economic history we feel that they secure a desirable combination of fact and theory, of induction and deduction. The historical background which they obtain is of great service to them in their further study of economic principles and problems. One semester only is given to this course, but they are subsequently given opportunities to elect further courses in the economic history of England and of modern Europe, as well as a more advanced course in that of the United States.

The manner of presentation is oral quizzes based upon a textbook and a book of collateral readings. Lectures have been given up in order to permit all the time to be used for class discussion. The course is by no means regarded as merely informational, but rather as affording training in accurate presentation of facts, in correct inductive reasoning, and in causal relationships. Written exercises are used in various ways. The writer has even posted a list of historical novels dealing with different phases of our economic development in order to vivify the subject matter but the reading of these is entirely optional.

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While the subject is taught by members of the department of economics and is treated as an economic discipline, every effort is made to relate it to the other courses in the curriculum so as to prevent duplication, and also to the other social sciences, especially the regular courses in American history. For many of the other economic courses economic history is regarded as an introduction. The historical framework is here provided into which later other courses may be fitted which shall elaborate some special subject. The course in economic history seems the one best adapted to serve as the general introduction which shall link together the rest of the work of the student in the college of commerce and business administration.

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By the publication of this volume Prof. Tryon has filled a gap in the industrial history of the United States and especially in the history of manufactures. The field which he essays to cover had hitherto been neglected, the

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writers on manufactures usually interpreting that word in the popular rather than in the etymological meaning. The phrase "household manufactures" in Prof. Tryon's book is defined to include only those articles made in the home or on the plantation by members of the family or plantation from raw material produced largely on the farm where the manufacturing was done. It does not include articles produced under the handicraft, shop, mill, or factory systems, each of which marks a subsequent stage in the development of manufactures in the United States.

As to the importance of this subject during the period covered there can be no question. The following quotation does not overstate its claims for consideration:

> It is certainly no exaggeration to say that civilization could not have been maintained in sections of the New England and Middle States during the colonial period, and on the frontier everywhere for several years after the appearance of the first settlement, without the system of household manufactures.

The task of collecting and winnowing the material, and of assembling and interpreting it, has been well done by the author. A clear picture is given of the characteristics of household manufactures, their place in the domestic economy, and their value in supplying the needs of the people. During the colonial period they were pursued from necessity and were local in scope. After 1765 they were definitely and purposely developed as a method of resistance to England's colonial policy. This development continued throughout the Revolution, suffered a sharp decline after the declaration of peace, but was revived again about 1790, and continued until our industrial independence was assured and the household manufactures were supplanted by the factory system.

The study is a careful, able, and scholarly piece of work, which supplements admirably the recent "History of Manufactures," by Victor S. Clark. The further work to be done in this field must now consist of more intensive studies of particular industries, of which there exist already a few excellent ones, or of particular localities and periods.

Valuable historical and statistical material can also be found in the Census Reports, especially those for 1860, 1880, and 1900, and in the Reports of the Departments of Agriculture, of Commerce, and of Labor. The occasional reports of various temporary commissions should also be consulted for special data, as those of the Industrial, Monetary, Immigration, Federal Trade, and similar commissions.

ECONOMIC GEOGRAPHY OF FOREIGN COUNTRIES.

By GEORGE B. ROORBACH,

Professor of Foreign Trade, School of Business Administration, Harvard University.

One of the fundamental studies to be undertaken in connection with the subject of foreign trade is included in economic geography. To plan for the development of trade in any part of the world requires an intimate knowledge of the land and people with which trade is to be carried on. This study will include a consideration of the position of the countries in respect to other lands and to trade routes; the physical features, climate, and natural resources as they determine or influence the industries, life, and trade of the people; a description and explanation of the present economic conditions as determined by the facts of geography, history, and peoples; and an attempt to interpret the possible future development of the country and its trade as indicated by

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an examination of the underlying physical, racial, and economic conditions of the present.

At the Wharton School of Finance and Commerce, of the University of Pennsylvania, the work in economic or commercial geography has been planned as follows: During the freshman year, all students are required to take a course in "Economic resources." This considers during the first semester the fundamental natural economic resources, their importance, uses, location, and the question of their conservation as it is related to the industrial community. During the second semester, type regions are studied as examples of the way the fundamental physical factors of location, climate, surface features, and resources affect the economic development of different parts of the world. Such widely divergent regions as England, Spain, China, Columbia, and California are studied in a general way.[1]

In the sophomore year, the student may elect either a three-hour per week course in "Manufacturing industries of the United States," which is a detailed study of the United States from the industrial point of view, or a three-hour course on "Industrial districts of the United States," which makes him familiar with the various sections of our own country. During the sophomore year, also, the student may begin the actual detailed study of foreign countries, and continue this study, if he so desires, during the last two years of his college course.

There are three such courses offered, each requiring two hours per week for the entire year. These courses are: 1. "The economic and political geography of Europe and Africa;" 2. "The economic and political geography of Asia (including Australia);" 3. "The resources and industries of South and Central America." The general method of presentation is the same in all three, except that more attention is given to political affairs in Europe and Asia than in the South American course. In each case, the general facts concerning physical features, climate and resources of the respective continents are outlined in relation to their effects upon industries, commerce, and peoples. Then, in more detail, each of the political divisions is studied. Emphasis is, of course, put upon present, and the probable future, commercial relations of the countries studied with the United States. The imparting of information concerning foreign countries is not the chief aim, although this is important. The attempt is made to give such an interpretation of the country that the student will have an understanding knowledge of the land and its people in order that he can form his own judgments concerning its economic and commercial possibilities and needs. Be his interests in the country, commercial, financial, industrial or political, the student will then at least have a background that should help him in the formation of sound decisions and the planning of wise policies when the occasion arises.

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[1] This statement was prepared at the time the writer was assistant professor of geography at the University of Pennsylvania.

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FOREIGN AND DOMESTIC MARKETS AND TRADE.

By EDWARD D. JONES,

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Our problem at the University of Michigan, in giving specialized economics courses, is to adapt them to the requirements of undergraduate students. Our

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students are taking a regular college course, and are electing programs of courses in economics as a semiprofessional element which must be adjusted to the other requirements of a general college course. Our work is given in the college of literature, science and the arts, and not in a separate school or department of commerce and business administration. This limits us materially in the development of the technical aspects of subjects connected with special occupations. In a course on foreign trade conducted last semester, probably not one of the 55 students would ever have any direct and immediate connection with foreign trade. Our inland location, and our non-professional character, indicate a different conception of a course from that which would be appropriate for a commercial school in a seaboard city.

Nevertheless, since this course was offered for the first time, and since so much has been said in the discussions of the national foreign trade conventions about courses of study with teeth in them, it was decided to devote one-half of the time to technical questions, and one-half to general foreign trade policies.

There were presented, therefore, in the first half of the semester, such subjects as the present situation of American manufacturing industry with reference to outlets, the probable advantage of American industry in international competition, the method of making a systematic analysis of a foreign market, advertising in foreign trade, the training and handling of foreign salesmen, the use and protection of trade-marks, the organization of a foreign sales department, the arguments pro and contra with reference to allowing combinations in foreign trade, the technique of a sale (including terms, weights and measures, moneys, guarantees, etc.), transportation and shipping (including a description of all the documents required), credit and finance (bank credits, book accounts, drafts, etc.). To this was attached a discussion of branch banks as competitive agencies. This section of the subject was closed up by studying the effect of foreign investments, the various forms of Government aid available to the American exporter, the various types of tariff in existence, and the general character of the network of commercial treaties in existence. The functions performed by the various classes of agencies were also considered; such as manufacturers' export agents, export commission merchants, etc., available to aid the American manufacturer. All of these matters were handled very briefly. Use was made of Mr. E. W. Zimmerman's Foreign Trade and Shipping, supplementing it liberally with B. O. Hough's Practical Exporting, readings selected from the Proceedings of the National Foreign Trade Convention and the Exporter's Encyclopedia. A few problems in this part of the semester were also used. When we finished we had merely glanced at the economics of ocean freight rates, had done nothing with foreign exchange, and were convinced that four or five times as much effort would be required to get the technique so that it would be of any material and lasting advantage to a young man who might be going into a foreign sales department. Such a thorough and adequate course, as intimated at the beginning is not thought to be justified in a Middle-West State university at present.

We then turned to the study of the general economic conditions of the chief supplying and receiving countries in international trade, and to foreign economic policies. This study we amplified by dividing the world into a few economic types, and considering the problems which arise from the increasing impingement of type upon type. We studied the problems of the British Empire, of Germany, of the new countries (Australasia, Argentina, etc.), of the Far East (China and Japan), of the Levant, and of the Tropics. For this work we were compelled to resort to readings chosen from many sources, for illustration; Bryce, Relation of Advanced and Backward Races; Ross, Foundations of Soci-

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ology; Shadwell, Industrial Efficiency; Dawson, Modern Industrial Germany; Smith, Chinese Characteristics; Bell and Woodhead, The China Yearbook; Kidd, The Control of the Tropics, etc.

In this section of the course use was made of a great many problems. A small working collection of perhaps 25 volumes was put in the department library, including such works as Fullerton, Problems of Power; Naumann, Central Europe; Hauser, Germany's Commercial Grip on the World; Hornbeck, Contemporary Politics in the Far East; Coolidge, The United States as a World Power; Seymour, The Diplomatic Background of the War; and Calderon, Latin America. This literature the class worked with, in response to definite problems set them. This is illustrated by a problem chosen at random; giving the problem and the answer briefed out, as prepared in notes for the quiz section:

SAMPLE PROBLEM WORK.

Problem: How did the diplomats attempt to solve the problem of Morocco by the Algeciras act? What brought about their failure?

Reference: Walter Lippman, "The States of Diplomacy," Ch. X, Algeciras: A Landmark, pp. 145–149. Univ. of Mich. Library call number 351 L77.

Answer (briefed):

Convention at Madrid, 1880.
- All agreed to integrity of Morocco.
- Equal trade privileges for all nations.
- Plan did not work out.
- Emperor William's visit to Tangiers.

Convention at Algeciras. 1905. The act.
- Police under Sultan.
  - French and Spanish officers (46–60) to aid him for 5 years.
  - Inspector-general to be a Swiss, 5 years. Report to Morocco.
  - File copies of reports with powers concerned.
- Morocco State Bank.
  - Spanish money to be legal tender.
  - French corporation law applied.
  - Censors appointed by German Imperial Bank, Bank of England, Bank of Spain, Bank of France.
  - Matter of taxes, acquisition of property, customs duties, navigation laws, public works, etc., settled between the Moorish Government and the diplomats.
  - Fraud and smuggling controlled by customs valuation commission.
  - Public contracts to be by bid, without respect to nationality.
  - This an attempt to form a sort of international control; a "Dependency of a World State."

Causes of Failure.
- Intrigues.
- National rivalries.
- Bargains.
- Plan "calls for a loyalty larger than the patriotism to which men are accustomed."
- Historical precedent. "When we think how difficult a task it was to bring about Italian, German, and American union, we need not be surprised that the experiment with a world state to control Morocco should have ended in disastrous failure."

Four or five such problems were given out at a time, each one to a small section of the class, so that books would be available. The class appeared to enjoy this study very much, regretting the time which had been spent on technic[illegible] The readings and the problems were held together by lectures, which aimed to give in outline the industrial characteristics of the sections of the world being studied.

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FOREIGN MARKETS AND TRADE PROBLEMS.

By PAUL T. CHERINGTON,
Secretary National Association Wool Manufacturers, Boston, Mass.

Manufactures have figured conspicuously in the export trade of the United States since about the year 1895. Before that time a large number of manufacturers were doing a thriving export business, and several American merchant houses were selling in foreign countries large quantities of American manufactured products. The statistical measure of the value of American exports indicates, however, that about that time the increase in the exports of refined petroleum, bar copper, steel, agricultural implements, and a few other lines of manufactures, marked the beginning of what was really a new stage in American export history—a stage in which manufactured products became conspicuous in our exports as compared with agricultural products.

It is well to keep in mind the fact that our exports of manufactures, large as they became, did not materially surpass in value our exports of raw cotton alone for more than 10 years after this increase in the exports of manufactures actually began.

Vigorous and in the main well-conducted agitations in favor of increasing the exports of manufactured products have been conducted in this country for about 20 years. Notwithstanding all of these agitations, however, the percentage of the total number of manufacturing concerns in the country which are intelligently conducting a successful and profitable export business is still small. It seems to be a fact that even now, notwithstanding all the interest of foreign affairs which may be expected to follow the war, the number of concerns which will be willing to pay the price for an intelligent development of export business will be small compared with the total number of concerns doing business in this country which might be said to be in a position to actually undertake some kind of foreign business.

This prediction is not based on any assumption of lack of astuteness on the part of American manufacturers. On the contrary, it is based upon the assumption that most of them have well-developed skill in recognizing places in which they can best sell their goods and the methods which they can most profitably employ. Most American manufacturers are not prepared for conducting foreign business, and they have the good sense to know it. Those who are prepared either temperamentally or by training, or who are willing to invest the necessary time and effort in securing preparation, probably will represent a very small percentage of the total number of American manufacturers for years to come.

Perhaps the most characteristic feature of the American business man is the consistency with which, at least in his commercial operations at home, he may be counted on to take a wise and profitable course without being able to tell accurately why he did it. As long as he had the largest free-trade area in the world in which to operate, and as long as this area was expanding in its purchasing capacity every year fast enough to take care of the most vigorous new competition, this dependency on "native wit" was satisfactory. There has been a growing conviction, however, during the past few years that these conditions were in process of change and that this intuitive ability was going to require supplementing with an increasing amount of inquiry into the underlying reasons for economic phenomena. The rapid rise of training for business of college grade and of the professional school type is perhaps the best evidence of the spreading acceptance of this idea.

What has been true of domestic business in regard to this change in the attitude toward educational preparation is at least equally true in foreign business.

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In the case of foreign business, however, the educational facilities are hampered by the greater complexity of the problems offered, by the more profound lack of elementary instructions in the underlying principles, and by the spread of a number of misconceptions. All of these make the problems of education in foreign trade more serious than they otherwise would be.

The question is often raised why the American manufacturer who displays such a high degree of ability in developing his domestic business has made such a pitiable record in many instances when he has undertaken to do foreign trading. The fact that such cases have occurred is beyond dispute. There is, nevertheless, a distinct increase year by year in the number of concerns which are approaching export trade in the spirit which assures success. They have no illusions, and they are filled with neither the spirit of the pioneer nor that of the commercial missionary. They are attacking export business with the same good sense they have used in attacking corresponding problems in domestic business. The point I want to make clear in connection with all of this is that certain American manufacturers and merchant houses "discovered the world" several years ago and those who have attacked the task of developing an export business in the same spirit in which they would have attacked it at home have made remarkable successes. At the same time the great company of concerns which have attacked the problem in a false spirit of adventure and with their minds obscured by complex misconceptions have uniformly met with a greater or smaller degree of failure.

No matter what postwar arrangement is entered into for the supervision of control over international commerce, it is reasonable to assume that competition for trade will be of the very keenest sort. Notwithstanding international agreements, it is safe to assume that the element of scramble will be very large and that national lines will be emphasized more than ever even under the old conditions. One of the rudest shocks experienced by most American exporting manufacturers was the discovery that there was no such thing on the planet as an "unoccupied market" which was worth having. Americans who had built up their business in this country under the sharpest kind of competition between American producers, and who were in many cases operating behind a tariff barrier, thought they knew something about competition. Their ideas, however, had to be revised when they undertook to sell goods in competition not only against foreign manufacturers but also against American manufacturers and merchants. They came to realize then that the sort of competition which they encounter in any one of these "unoccupied markets" is of the sort they could expect to encounter in this country if the volume of trade here were substantially diminished and the tariff barrier removed.

With this conception of what a "market" is and of the conditions of rivalry which may be expected to develop, it becomes clear that American manufacturers and merchants can no longer depend safely on the "depressed brain market" of other countries for their supply of young men to conduct their export business. Those markets for brains no longer are depressed by an oversupply of suitable men nor by the lack of opportunity for these men to serve their own fellow country. Moreover, it is evident that the American young men who must now be depended on to develop American export business must have not merely the right spirit and the right natural equipment, but they must have a type of training not hitherto generally available in this country.

Care should be taken not to leap at once to the idea that the type of training called for in the preparation of these young men should necessarily be the same type which has been employed successfully in training young men of other countries. The indications are that young men for export business in this country will have to be partly a product of the educational system and

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partly a product of the merchandising mechanism which has been developed in this country and which has many points of too great value to be sacrificed.

The educational system of the country is going to find itself taxed to the utmost to develop a satisfactory system of training in international ideas and sales technique in economics and in the other underlying principles which will give to young men a conception of international commerce which, while strictly in accord with the facts, will at the same time be grounded on sound underlying principles.

Sales methods and traditions which have been developed in this country constitute perhaps the most valuable single resource with which the United States can hope to meet competition in foreign markets. In many respects the technique of salesmanship has been developed in this country more satisfactorily than it has anywhere else. The best elements of this development must be preserved and incorporated in any attempt to spread American commerce. In this work the educational system will require the close cooperation of business men.

The great task before the United States in the preparation for the expansion of foreign business is not the imitation of the methods of other countries but the adaptation of American methods to foreign conditions.

In summary it may be said that the problems before the United States in developing foreign business and particularly export trade involve a wide variety of apparently divergent undertakings, all of which must be made to work together toward the accomplishment of a single end. Perhaps chief among all of these is the preservation of American skill in selling technique, and its adaptation to new conditions. It will be a serious mistake, however, to treat this independently of the great host of other problems which must be worked out together. The development of an adequate financial system, the development of an adequate mechanism for delivery of merchandise and communication, the working out of a consistent national commercial policy and the training of men for foreign trade as a serious and exacting business, are simply a few of the problems which the fostering of American export business involves.

HARVARD UNIVERSITY COURSES ON FOREIGN TRADE.[1]

The following paragraphs describe the courses at Harvard University on foreign trade and foreign trade methods:

The war has had two marked effects on American foreign trade. The first is the serious alteration of its volume and character, growing out of the disturbance of economic conditions here and in Europe. It is probable that the export trade in American manufactures will assume a permanently increased importance.

A second effect of the war upon American foreign trade is the curtailment of the supply of young Englishmen and Germans who formerly were available on favorable terms as recruits in the service of American concerns engaged in either importing or exporting.

These conditions have turned the attention of American houses in the foreign trade to the question of securing young Americans for this work. The foreign trade field therefore is more attractive as an opening for the American college man than it ever was before.

Our foreign trade involves many difficult problems, the solution of which requires familiarity with business conditions in foreign countries as well as

[1] This statement was prepared at the time the writer was a member of the faculty of the Harvard Graduate School of Business Administration.

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in our own and with international trading methods. In the import trade, direct foreign purchasing by manufacturers, import houses, and department stores, for example, calls for a wide knowledge of the sources whence the goods are to be obtained, of the agencies by which the trade is carried on, and of other features of the commercial mechanism. This is distinctly more urgent than was the case when the trade was handled more largely by commission houses.

Some American manufacturers and some American merchant houses already had made remarkable records of success even before the war conditions developed. But as a whole, American manufacturers and merchants have not put forth the serious and consistent efforts necessary for building up an export trade in manufactured goods. It is becoming increasingly clear, however, that foreign markets for manufactured products can not be secured by following the policies of the exporters of raw materials. Manufactured wares must not only be offered for sale; they must be pushed and pushed intelligently with due reference to distributing methods and the marketing conditions. Merchandising methods are, in some lines, quite different in the United States and foreign countries.

Both import and export trades are studied in these courses. But the greater emphasis is laid on means of placing goods in foreign markets, the competition which is likely to be encountered, the probable demand for various products, and how these products are actually to be distributed to the foreign consumers. Opportunities for capital investment in foreign countries are also considered. The courses are informative in that they describe the geographical, social, and industrial conditions which form the essential background of international commerce. They are analytical in their search for the reasons why particular methods are used and why special developments are taking place in special trades.

The analogies and contrasts with the merchandising methods in the domestic trade of the United States make such study profitable even to students who do not plan to enter the import or export trade.

FOREIGN TRADE METHODS.

The central question in this course is: How is American foreign trade carried on? In import trade, for instance, the ground covered includes such matters as the selection of sources, establishment of connections, internal organization, and the development of markets; and in the export trade, the selection of markets, the selection of exporting methods, the determination of export price policies, relations with commission houses and agents, and problems of order execution, such as packing, shipping, insurance, forwarding, exchange, credits, and collections.

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THE CHEMISTRY OF COMMERCE.

By J. H. JAMES,

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1. THE FIELD.

To the chemist, in the last analysis, the expression "chemistry of commerce" means exactly the same as industrial chemistry. Everything that is manufactured, into which chemistry enters at all, would be included under the term chemistry of commerce, since, of course, all manufactured goods enter into the commercial life of the nation and of the world. Chemistry has to do with a great range of articles of manufacture which are not ordinarily regarded as chemical. One would, for example, hardly place rubber manufacture in the group of chemical industries, but to-day rubber manufacture is absolutely dependent on the chemist. In fact there are more industries not commonly called chemical than there are that produce for the markets of the world the products ordinarily called chemical, such as acids, alkalies, salts, explosives, dyestuffs, synthetic drugs, photographic chemicals, etc. The group of industries not ordinarily called chemical yet in which chemistry is essential would include as the more important members pulp and paper manufacture, rubber manufacture, paint manufacture, pottery manufacture, the dyeing and bleaching industries, the manufacture of food products, soap manufacture, the fermentation industries, the petroleum industries, coal and fuel gases, artificial silk manufacture, artificial leather manufacture, artificial plastics, casein products, the manufacture of primary batteries, storage batteries, the electroplating industries, etc.

All our manufactures involving chemical operations have reached their present stage of development through one of two channels. In the older group, including glass, ceramics, paints and varnishes, soaps, leather, the fermentation industries, rubber, and some heavy chemicals, the manufacturing practice was built up from practical observations entirely, with no knowledge or thought as to the fundamental chemical principles underlying the whole, such procedure being commonly known in engineering circles as "the rule of thumb." Having attained a certain proficiency in these lines by empirical methods alone, these manufacturers have naturally been rather conservative in their adoption of improved methods and processes, until forced to do so by the success of competitors who evidence more progressiveness in calling in the aid of scientifically trained men. The other group of manufacturers includes all those that have been the direct product of scientific research; the so-called coal-tar colors, synthetic essential oils, synthetic drugs, synthetic food products, all electrochemical and electrothermal products, such as calcium carbide, carborundum, artificial graphite, electrolytic alkali and chlorine, electrolytic chlorates, etc. Each of these industries, instead of evolving by methods of blind experimentation along rule-of-thumb lines, were in almost every case worked out with scientific thoroughness by men of fine technical training who utilized their knowledge of chemical science and engineering to bring the process to a point where the industrial exploitation was a success because the chemical principles underlying the operations were thoroughly understood.

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The almost fabulous success of these newer chemical processes has had the effect of stirring to greater activity those manufacturers of the older group noted above, and the improvements effected by the employment of trained scientific men in these lines have in many cases been quite as remarkable as the development of the newer processes themselves.

2. FUTURE DEVELOPMENT IN INDUSTRIAL CHEMISTRY.

It is interesting to note the relative advancement of the various sciences at various times. It is well known that there were more epoch-making discoveries in physics in the nineteenth century than in chemistry. However, the science of physics was further advanced at the beginning of that century than chemistry, which had, as a matter of fact, really just attained standing as a science a few years previously by the work of Lavoisier and others. Before that period, included in the closing years of the eighteenth century and the beginning of the nineteenth, chemistry was hampered by the vagaries of the phlogistonists, and earlier still obscured by the mysticism and fraud of the alchemists; so that the real development of chemical science took place in the last century. What 100 years in development in chemical science has done for modern civilization is evident to the most casual observer.

During this time the scientific study of the behavior of matter has laid well the foundations for future progress. With the momentum thus acquired, we have really only begun in the development of chemical science and the chemical industries. When it is considered that it is impossible now for an educated chemist, working all the time, to even read the results of all the chemical research that is being carried out, some idea can be gained of the enormous additions that are being made to chemical knowledge and the impetus that industrial chemistry is sure to receive from such work.

A few of the lines of industrial chemical development may be indicated in the following processes, each of which is either under way beyond the experimental stage or in the experimental stage with correct theoretical grounds for certain success:

The manufacture of all nitrates from nitrogen of the air.
The recovery of potash from feldspar.
The manufacture of new products from denatured alcohol.
The manufacture of acetylene from new sources.
The utilization of natural gas as a source of new chemical products.
The use of electric current in preparation of inorganic as well as organic compounds.
The utilization of the hydrocarbons of petroleum as sources of new products valuable commercially.
The production of substances of great industrial value from cellulose.
The synthesis of india rubber on an industrial scale.
The production of compounds of industrial value from coal without destructive distillation.
The manufacture of a substitute for linseed oil in the paint industry.
The preparation of artificial products to replace varnish gums, the supply of which is decreasing rapidly.
The discovery of an efficient preservative coating for iron and steel structures.

3. CONTENT OF A COURSE IN THE CHEMISTRY OF COMMERCE.

It is evident from the foregoing that our subject covers a very broad field. However, here we have a good example of one of the benefits of scientific development; a student well grounded in the fundamentals of chemical science can in a short time master the manufacturing details of any process which involves chemical reactions. Chemistry as a science is now so well worked out that it has become the handmaid of manufactures.

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To properly train a student then for modern commercial life, a certain amount of chemistry should certainly be included in his training. While the chemist would say, "let him take a course in chemistry," it is evident on second thought that the commercial student must devote a considerable part of his time to subjects needed for the business side of his future work.

First of all, a good course in general chemistry should be given. This may correspond closely to that given in any of our technical schools in the freshman year. The lectures and quizzes should amount to approximately three hours per week for a year, while the laboratory work to accompany this should be about three hours per week for a like period.

At this point, educators will differ. The writer has through 15 years of teaching experience consistently held to the idea that the student who does not intend to follow chemistry as a profession, but needs chemical knowledge as a part of his preparation for the business end of manufacturing and trade, should not be required to take up any analytical chemistry whatever. Admitting that qualitative analysis, for example, gives a fine training in manipulation and fixes firmly in the student's mind certain chemical principles yet for the student under discussion it is hardly a profitable subject for him to spend time on.

It would appear that the freshman course above should be followed by a course in organic chemistry. This should be scheduled for two lectures per week for a half year, with three hours per week laboratory work for the same time. While such a course is very much abbreviated, and would not do at all for a chemist's training, it will give the commercial student a sufficient amount of knowledge concerning this very important field to take up the next course.

The final course in the chemical group that the writer would propose for commercial students is that of industrial chemistry. In this course not only should the chemical principles involved in each process studied be emphasized, but the source, cost, and purity of each substance entering into the operation should be brought out in each case. This course should occupy two or three hours per week for a year. The writer has found that a good plan is to teach industrial chemistry by the seminar system; each student is assigned certain processes, such as sulphuric acid manufacture, the manufacture of by-product coke, the manufacture of glass, etc. One hour, and sometimes more, is given to the discussion of one topic, the student himself being the lecturer for that day. He must come to the classroom prepared with charts, lantern slides, and sketches to illustrate his topic. In this way, what might otherwise be a rather dreary routine of lectures or recitations becomes one of the most interesting parts of the student's school work.

The writer realizes that the foregoing grouping does not include as much as could be profitably used by the student in his later career, but in this as in all other course arrangements educators are and probably shall always be compelled to compromise between what he would like to do and what circumstances compel him to do.

As to the correlated subjects that should accompany the foregoing group—mathematics through analytical geometry, general physics, preferably the physics given to engineers in our technical schools.

The time of the chemical subjects listed above should be approximately as follows: General chemistry, freshman year; organic chemistry, either sophomore or junior year; industrial chemistry, either junior or senior year (after organic chemistry is completed).

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TROPICAL RESOURCES AND HYGIENE.

By DAMASO RIVAS,

Professor of Parasitology, University of Pennsylvania.

While in general it may be said that the wealth of a country is judged by the natural resources it possesses, in a more concrete sense the development of such resources has in reality a more direct bearing upon that index. The vast resources of the Tropics, for instance, are almost inexhaustible, and yet it is common knowledge that they have remained for generations practically unused and only recently have been but merely touched, this being due in part to the prevalence of diseases which make those regions almost uninhabitable.

In the discussion of this subject a brief outline will be given first concerning the resources of the Tropics, and secondly the sanitation of those regions with special refernce to the intimate relationship which the one bears to the other.

It is beyond the scope of this article to deal in any great detail with the resources of the Tropics. A general and brief résumé, however, drawn from the references given at the end will answer the purpose. For the same reason the discussion will be limited to the resources of tropical America, with which the writer is better acquainted, although what applies to tropical America may be said to apply more or less to other tropical countries.

TROPICAL RESOURCES.

In tropical America are found almost all the minerals, from coal and iron to silver, gold, and precious stones, and also the diamond. The world largely depends upon South America for the supply of bismuth. Bolivia produced about 500 tons annually, with the mines of Brazil still unexploited. Chile produced over 40,000 tons of copper in 1914, and Peru over 33,000 in the same year.

Brazil possesses the largest known iron ore territory in the world, with a resource of 7,000,000,000 tons, and Chile has an annual output of almost 2,000,000 tons. The same country produced about 2,500,000 tons of niter.

Brazil produced about $450,000 of gold and silver in 1914, Colombia over $7,000,000, and Mexico over $18,000,000 in the same year, which is not in proportion to their large resources.

The almost inexhaustible oil resources of Mexico may be appreciated by the rapid development which this industry has reached in a few years: From 220,000 barrels of oil produced in 1904, the production was over 3,000,000 in 1910, and over 21,000,000 in 1914, with a total output of 90,000,000 barrels from 1904 to 1914. As to other countries, Peru produced 47,000 barrels in 1896; it reached 500,000 in 1906 and over 1,000,000 barrels in 1914, with a total output of 14,000,000 from 1896 to 1914.

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Oil is produced in most tropical American countries, and in this connection mention may be made of the enormous resource of asphalt of Venezuela, which is still to be developed.

Some idea as to the agricultural resources, one of the most important sources of wealth of tropical America, may be obtained from the following figures: In 1913 Brazil produced 30,000,000 head of cattle, 7,000,000 horses, 3,000,000 mules and donkeys, 10,000,000 goats, 10,000,000 sheep, and 18,000,000 hogs, with a total of about 80,000,000 head for the year or four head per capita. This branch of agriculture is also developed in other Latin-American countries.

The vast production of coffee by Brazil and tropical America is well known, as upon this the coffee supply of the world largely depends; and the same is true of rubber, etc.

The forest resources of tropical America, and the potential wealth of these countries, may be illustrated by the number of square miles of forest in South America: Argentina has 231,000; Brazil, 1,500,000; Bolivia, 284,000; Chile, 59,000; Colombia, 240,000; Ecuador, 145,000; Guiana, 64,000; Paraguay, 84,000; Peru, 175,000; and Venezuela, 180,000; which makes a total of about 3,000,000 square miles of forest divided as follows: Tropical hardwood, of which cedar is the most important, 1,613,000; Parana pine, 309,000; subtropical hardwood, 259,000; greenheart mora forest, 241,000; mahogany, 84,000; Chilean pine, 96,000; and quebracho, 404,000.

Very little is known concerning the commercial value of these vast forests, but the presence of utilizable woods in tropical forests, in addition to the rare woods, such as mahogany, dyewoods, etc., and the present scarcity of lumber make it very probable that the world may be obliged to depend largely upon the tropical forest for the common timber supply.

The above brief outline of the natural resources of the Tropics, the greater part of which still remains undeveloped, clearly shows the potentiality of wealth of these countries. Taking Brazil, for instance, with an area of 8,524,770 square kilometers, a little more than the area of the United States of America excluding Alaska, it has a population of only one-fifth of that country, or about 20,000,000 inhabitants. This naturally leaves vast areas of undeveloped land the price of which a few years ago varied from 25 cents to $2 per acre, and the same is true of other tropical countries.

TROPICAL HYGIENE.

Various have been the views advanced from time to time as to the cause of neglect by which for generations the resources of tropical America have remained undeveloped. But why make theoretical speculations when a more simple and logical one is evident, namely unhealthfulness.

That healthfulness is the most potent factor in determining the development of a country or a continent, and that upon it depends the achievement of any enterprise, admits of no doubt. We need only to mention the failure of the French Government to build the Panama Canal, because of the prevalence of disease in that zone, contrasted with the rapid and marvelous accomplishment of the Government of the United States of America after the sanitation of that region.

Healthfulness in fact has determined the development and molded the destiny of the human race and has been the real determining and limiting factor in the building of empires. The diseases common to the Orient were an insurmountable barrier to Alexander and to the Crusaders. Cholera and other diseases of India have been the chief obstacles in the development and settlement of that country by Europeans, and the same is true of sleeping sick-

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ness, malaria, etc., of central Africa. For the same reason the Anglo-Saxon and other races of northern Europe have made permanent settlement in North America, as well as the Latin race of southern Europe, of tropical and subtropical America; in other words each race has followed the natural channels of emigration to similar or nearly corresponding surroundings. But above all, if Europe as a whole conquered America and made permanent settlement of this continent, it was because she was armed with the most powerful weapon of offense, the disease she imported, which rapidly spread among the natives with fatal consequences.

Smallpox in 1507 exterminated whole tribes in the West Indies, a few years later depopulated San Domingo and destroyed 3,500,000 people in Mexico (Hirsh), and the same happened in other countries. This was true also of other infectious and bacterial diseases, but the protagonist in this evolutional tragedy was tubercle bacillus. Most bacterial diseases leave a certain degree of immunity, which is not the case with tuberculosis.

The Caribes of the West Indies are nearly extinct. The Indians of North America are rapidly disappearing, as are also the aborigines of cold and temperate South America. The Indians could not in a few generations undergo such an evolution as to acquire an immunity against tuberculosis which the European has accomplished by natural selection in thousands of years. This clearly shows that diseases and not the sword have been the real deciding factors in the building of empires.

But the era of bacteria as decisive of empires, as admirably described by Reid, is past. The time of discovering new continents and lands, of great conquests, is closing, and diseases have spread all over the world. Bacteriology and parasitology have not only discovered the causes of diseases, but also the means of their prevention. Specific treatments have been discovered even for diseases of still unknown etiology; and hygiene and sanitation in general now constitute an exact science.

Of the common diseases of the Tropics, such as leprosy, dysentery, trypanosomiasis, filariasis, ankylostomiasis, etc., and the most important of all, malaria, the cause, mode of transmission, prevention, and treatment are known. It is a common knowledge that these diseases are prevalent in those countries where hygienic and sanitary conditions are unfavorable. It is known, too, that disease is an insurmountable barrier to the development of the vast resources of tropical America and the progress of the Latin-American countries.

With the instrumentality of modern hygiene and sanitation at our disposal for the prevention and eradication of these diseases, it is beyond any reasonable understanding why the sanitation of the Tropics has not received due attention. The Rockefeller Foundation has done much in that direction, it is true, but much more is needed, namely, the earnest cooperation of the respective governments of those countries. The reason why they have not cooperated is obvious, but is beyond the scope of this article for discussion.

The problem of sanitation of tropical America will be aided to a large extent by the fact that the greater part of the inhabitants of those countries, the Latin-Americans, represent a race admirably adapted to stand the unfavorable climatic conditions of those regions. The people are very healthy by nature and to a large extent immune or resistant against certain diseases, as may be shown by the components of its evolutional development.

The present inhabitants of the American continent, it is true, represent almost all the races of the world, but roughly, the greater part may be said to consist of the following extractions:

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[illegible] Northern Europe.

[illegible] and some other

[illegible] Atlantic or [illegible] were found to have [illegible] and dis- [illegible] that [illegible] America. The [illegible] Negroes are

[illegible] with [illegible] and as the [illegible] than [illegible] the Latin- [illegible] them as [illegible] of the [illegible] represent an

[illegible] development [illegible] by having [illegible] immunity against [illegible] American more [illegible] other tropical dis- [illegible] and conse- [illegible] conditions. [illegible] to diseases in [illegible] of tropical [illegible] found. [illegible] the Latin-Americans [illegible] sanitary condi- [illegible] temperate regions. [illegible] Americans will are to [illegible] Europeans to

[illegible] regions is an [illegible] would amount to [illegible] which is not the [illegible] The advancement [illegible] in whatever region [illegible] and appreciate [illegible] the causes [illegible] of the regions of those tropical principles [illegible] in other words— which is responsible for the sad circumstances so often seen and which could easily be avoided among the immigrants of Northern regions who carelessly hazard their future in tropical countries.

In this connection it is of primary importance that those who desire to settle in the tropics, or undertake some enterprise in those countries, should first receive appropriate instruction in bacteriology, hygiene and sanitation, para- sitology and tropical medicine, and also in Spanish or Portuguese. This instruction may be taken in one or two semesters in any of our univer- sities which now offer such courses. The courses should consist of didactic lectures

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and demonstration in the laboratory. The student should become proficient in the underlying principles of hygiene and sanitation before receiving a certificate or diploma, and only then should be regarded as a candidate for a position, of whatever kind it may be, in the Tropics.

At the same time the writer believes it is an imperative necessity and of vital importance that the same instruction should be given not only in all universities and colleges, but also in the schools throughout tropical and subtropical America. The respective governments of these countries should awake to present-day requirements by directing their efforts toward the sanitation of the Tropics. "Health first," and only then can the almost inexhaustible resources of the Tropics be developed, and with it the progress and prosperity of tropical and subtropical America and of the Americans as a whole.

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BUSINESS MATHEMATICS.

By CHARLES C. GROVE,

Assistant Professor of Mathematics, Columbia University.

This statement is to serve the two purposes of assisting colleges to plan an adequate course of instruction in training for foreign trade and the foreign service of the Government and of enabling university men now in the field of business to plan for a systematic reading course relating to business mathematics.

Although the curriculum of the school of business of Columbia University consists of a two-year series of courses based on two years of collegiate study in an approved college, this statement relates to a four-year *collegiate* course in business.

It is further especially desired to make perfectly clear that *education* as distinguished from *training* is in mind. Education is the general development of all the potentialities and powers of a man. It leads him to understand the comparatively few fundamental principles of *rerum natura*, of physics, mechanics, chemistry, economics, etc., and to form fixed habits of clear, independent thinking and intelligent action based on those principles as they recur in most of our everyday problems. Education is general; training is particular. The educational course should put the student in possession of the basic principles of the subjects studied—as, for example, of accounting—so that he, in practice, may readily adapt himself to any form to be followed.

These thoughts have been allowed to intrude because of two observations:

First. There is still too much training not based on a sure foundation of education.

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Second. Almost all the expert arbitragists in foreign exchange are of foreign origin and training. It is high time that we raise up in this and other highly specialized departments a generation of American young men with as good education and technical training.

THE SUBJECT MATTER.

For some years the author has been accustomed to speak, loosely and briefly, of *static* and of *kinematic* mathematics in order to bring into bold relief two phases of our mathematical considerations or two points of view of the quantities under consideration. From the first point of view, quantities are at least thought of as of fixed and determined value, with no idea of approximation or variation. From the other viewpoint, quantities are recognized as varying continuously according to a stated law, as in analytic geometry; or variation and approximation are recognized as the rule and not the exception in practical life. The endeavor is then to ascertain the true measure of the quantities or to formulate a law according to which they seem to vary, at least within a limited range. This conception of quantity has led to the introduction of the statistical method into the mathematics of business to a rapidly increasing extent. The topics of the courses are accordingly:

I. STATIC MATHEMATICS.

A. Advanced arithmetic, logarithms.

1. Review of methods to develop speed and accuracy in addition, subtraction, multiplication, division, with short cuts that arise from an understanding of the nature of the operations and somewhat of the theory of numbers.

Arithmetical complement and arithmetical supplement.

The object is to bring the student into the atmosphere of number and of numerical relationships, realizing that for the clerical worker such an appreciation is of fundamental importance. Read A treatise on computation, by E. M. Langley, New York; Longmans, Green & Co., 1895.

2. Fractions and their decimal equivalents—terminating, repeating, or circulating—noting the distinction between rational and irrational numbers. Per cents of £ s. d., etc.

3. Proportion, simple compound, conjoined (in arbitrage), and even alligation, if desired, simply enough to acquaint the student with it, because of its usefulness in chemistry in "balancing equations," because it provides an easy solution to some problems that would otherwise involve indeterminate equations, and as it completes the systematic development of the subject of proportion.

4. The method of cancellation.

5. The elements of the theory and use of logarithms. Slide rules. The business man should no longer be afraid of the word logarithm. An extensive treatment, obtainable only in libraries, is in Appendix 12, Ann. Rep., 1896, of U. S. Coast and Geodetic Survey, under the title "Logarithms, their Nature, Computation, and Uses," by W. W. Duffield, Superintendent. With it are 10 tables.

6. The use and making of other tables, such as—

Interest, simple and compound.
Discount, simple and compound.
Annuity, amount of, present value, to amortize,[1] etc.
Bond tables.[1]

[1] This topic is mentioned here for convenience, but the actual use and making of the tables would occur when each is needed.

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B. The algebra of discrete quantities.

1. Rational integral functions.
2. Relationships between coefficients and roots.
3. Multiplication and division with detached coefficients.
4. Binomial coefficients—Pascal's triangle.
5. Permutations and combinations, distributions and derangements.
6. Introduction to probabilities.
7. Finite number series.
   - Progressions, arithmetic and geometric.
   - Series whose law may be determined.
   - Introduction to finite differences.
   - Introduction to interpolation, extrapolation, summation.
8. Undetermined coefficients, applications.
9. Mathematical induction.
10. Infinite series:
    - Geometric, exponential, logarithmic.
    - Convergence, divergence, tests.

C. The solution of equations—

- Of any degree, growing out of a study of the theory of equations.
- Of quadratic.
- Remainder theorem, factor theorem.
- Transformations, algebraic and geometric views of.
- Descartes's rule of signs.
- Rational roots (by synthetic division).
- Approximation of irrational roots.

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Some recent books on the subject are:

Schlauch, W. S. Commercial algebra. Book II. Boston, Ginn & Co., 1918.
Skinner, E. B. College algebra. New York, Macmillan Co., 1917. Chap. XIV. 263 p.
Young, S. W., *and* Morgan, F. M. Elementary mathematical analysis. New York, Macmillan Co., 1917. 548 p. (Chapters VIII and IX.)

It will be observed that the subject of permutations and combinations has been introduced early. That is for two reasons:

1. The subject above all others enforces, compels correct interpretation, concentration, clear thinking, definite statements. This will lead to the formation of the habits of thought which is the most important object of education to develop.

2. The students, for some years to come, will vary considerably in the kind of preparation for the work of these collegiate schools of business. Mature, experienced men, for whom in part these schools exist, will be in class with young men fresh from the examinations of the College Entrance Board. The subject of permutations and combinations will be new, fresh, interesting to, and within the understanding of, all members of the class alike, and will force upon the consciousness of all the cardinal purpose of the educational course.

The examples and exercises throughout shall be from practical business of to-day. It shall be their object to illustrate and illumine the topic under consideration and to reveal its applicability where that had not been apparent.

The foregoing covers the theoretical preparation for a text like The Mathematical Theory of Investment, by Prof. E. B. Skinner (Ginn & Co., 1913), which may be used during the second half of the year.

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Among the topics considered near the close of the first half year and in preparation for which the outside reading may be done is that of foreign exchange and trade acceptances, which will rapidly come into general use in both domestic and foreign trade. The following are books that may be assigned for reading and report:

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Swoboda, Otto, and Furst, Max. Die Arbitrage. Berlin, Hande und Spener, 1909.
Withers, Hartley. International finance. New York, E. P. Dutton & Co., 1916. 183 p.
——— Money changing. New York, E. P. Dutton & Co., 1913. 183 p.
——— Stocks and shares. New York, E. P. Dutton & Co., 1910. 372 p.
——— The business of finance. New York, E. P. Dutton & Co., 1918. 204 p.
——— The meaning of money. New York, E. P. Dutton & Co., 1916. 307 p.
——— War and Lombard street. New York, E. P. Dutton & Co., 1915. 171 p.
——— *and* Palgrave, *Sir* R. H. The English banking system. Washington, D. C., Supt. of Documents, 1910.
The brochures published by many large banking houses as, in New York, by The National City Bank, Guaranty Trust Co., The American Exchange National Bank, and others.

II. KINEMATIC MATHEMATICS.

The ideas of function, change, continuity, and continuous change, of variation and approximation.

The graph of rational integral functions of common and familiar occurrence, of other functions that arise, as cost, interest, annuity, present value, charts for wages, for exchange and arbitrage.

The principles of analytic geometry. The equation of a locus, the locus of an equation, the discussion of an equation.

Plotting functions as $S_n = \frac{a-ar^n}{1-r}$, $a_n = \frac{1-(1+i)^{-n}}{i}$, considering in turn two of the quantities as variable and the others as constant or as a parameter.

Developing functions whose graphs shall be of type forms for use later in statistical work.

Elements of analytic geometry in three dimensions.

SECOND YEAR.

Elements of the differential and integral calculus.

Elements of the calculus of finite differences.

The theory of probability.

The method of least squares.

Fitting simpler curves to data.

Statistical measures.

Correlation.

THIRD AND FOURTH YEAR.

The mathematical theory of statistics.

An elective and graduate course—Seminar on Biometrika and present writers.

An advanced mathematical theory of interest and life contingencies.

A graduate course following the Institute of Actuaries' text book. Parts I and II.

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Quetelet, L. A. Letters on the theory of probabilities. London, C. & E. Layton, 1849.
Rietz, H. L., Crathorne, A. R., *and* Rietz, J. C. Mathematics of finance. New York, Holt & Co., 1921. 280 + xiii p.
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Runge, C. Graphical methods. New York, Columbia University Press, 1912.
Walton, Seymour, Mathematics of accounting and finance. New York, Ronald Press Co., 1921. 274 p.
Wright, T. W., *and* Hayford, J. F. Adjustment of observations. New York, D. Van Nostrand Co., 1906.
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BUSINESS PSYCHOLOGY AND ETHICS.

By JAMES E. LOUGH.

Professor of Experimental Psychology and Method, School of Pedagogy, New York University.

The study of psychology and ethics is rapidly gaining recognition as fundamental or basic work for everyone who is preparing to enter business as a profession. Psychology is the science of the mind, its attributes, limitations, development, springs of action, and control. The psychology of the business man may be a crude "rule of thumb" psychology, based largely upon inaccurate, and frequently prejudiced, observation of a limited group of cases, or derived from popular magazines and Sunday newspapers, or he may possess a knowledge of psychology that has been established upon general laws scientifically developed by means of extended study and investigation.

Business psychology comprises a group of psychological problems that can be applied directly or indirectly to business operations. The fundamental principles are in no way different from the principles of general psychology. Illustrative material, however, comes from the domain of business operations, and emphasis is placed on the somewhat limited group of laws that obviously fall into business operations. In many institutions the course in business psychology is based upon the study of standard or general textbooks of psychology. In such cases the student will find it necessary to make his own applications. He will also find it desirable to touch lightly upon, or to omit altogether, many topics that have a remote bearing on business, as for example, localization of functions, details of sense organs, and space perception.

The introductory course in business psychology should be a general course, that is it should include psychological problems that apply to a wide range of business activities. Following this first course, and based upon it, the student may consider special groups of problems, as for example, the psychology of salesmanship, psychology of advertising, mental rating of employees, vocational guidance and placement, and the psychology of factory management.

The following topics should be included in the first or general course in business psychology:

I. *Self-analysis.*—A study of the mental traits generally called for in business—observation, concentration, memory, imagination, reason, knowledge, ambition, confidence, loyalty, enthusiasm, cheerfulness, reliability, energy, persistence, initiative, self-control. Self-analysis should enable the student to realize which of his traits are strong and dependable and which are weak and undeveloped. He should also be able, as the result of his study, to make a more accurate estimate as to the mental traits of others.

II. *Mental development.*—An analysis of the content and processes involved in each trait mentioned in I, in order to determine methods of strengthening

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traits that show undesirable weakness. This applies in the first place to self-development, but also carries with it the methods to be followed in developing these same traits in others.

III. The application of the principles of habit formation to traits, principally to the traits involved in disposition and action, those forming the basis of character.

IV. *Springs of action.*—The natural (instinctive) and the acquired impulses and inhibitions. The origin and development of the instincts, conscious and unconscious imitation, the influence of health, sex, age, race, and social environment in modifying original springs of action and methods of evaluating springs of action, and effect of substitution of motives.

V. *Types of decision and methods of control.*—These should be studied in the first place by special reference to one's self and may then be applied in order to effect decisions in others. In this section should also be included topics on suggestion and obedience.

On completing the topics enumerated above the student should be ready to take up special problems in the psychology of business:

VI. *Psychology of advertising.*

VII. *Psychology of salesmanship.*

VIII. *Psychology of management.*

IX. *Scientific vocational guidance on selection of employees.*

X. *Fatigue and recreation as factors in efficiency.*

XI. *Acquisition of skill.*

XII. *Working with others.*—Cooperation, rivalry, helping and hindering, the development of morale.

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BUSINESS ETHICS.

Business ethics must be founded on the fundamental proposition that the standard of conduct, duties, and obligations, must be maintained in business

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transactions as well as in non-business activities. There is no special dispensation of morality for the business world. The great problem in business ethics will be to awaken students to the realization that a single code of ethics must be followed. The topics to be included in the study of business ethics are therefore not different in any essential from the topics treated in any standard course in general ethics. Illustrative material, however, must be drawn from business activities rather than from social life.

The following topics should be included in the course: I. Evolution of morality; II. Origin of social morality; III. The theory of morality; IV. The meaning of duty; V. The consideration of special problems of social and business practice—self-consciousness and altruism, loyalty, patriotism, cooperation, industrial duties, social and industrial alleviation.

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THE STUDY OF BUSINESS ADMINISTRATION AND ORGANIZATION.

In Preparation for Foreign Trade.

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Occasionally the term "business administration" is used in a broad sense to include all the functions of a business. It is then virtually synonymous with the term "business." More frequently, however, it is used to denote the strictly executive functions in the management of business. In discussing the place that a study of administration and organization should occupy in a course of training for foreign trade, the term "business administration" is used in this latter sense.

Business organization is also used in a twofold way. People speak, for instance, of organizing a company and refer then to the steps that must be taken in order to incorporate. Again they speak of their business as being well organized and refer then to the manner in which the functions of their business are facilitated by the disposition of personnel, equipment, and processes. It is in this latter sense that the term "organization" is used here.

The study of business administration and organization in preparation for foreign trade should include a course in the elements of administration and organization with general application to business of any character and a special course in the administration and organization of businesses or departments of such engaged in foreign trade.

It is particularly desirable that the student precede his special study of the administration and organization of businesses engaged in foreign trade by a general course in business administration and organization, because the student is then made to realize that there is no sharp line of demarcation

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between foreign and domestic business, but that foreign business differs from domestic mainly in that business is conducted under very different conditions.

The general course in the elements of administration or organization should include a treatment of such factors as the adjustment of the organization and administration to the purposes of the business and the conditions of operation; the delegation of authority, including such factors as departmentization, centralization, and decentralization; the control of delegated authority by means of reports, conferences, and personal relations; the relation of authority to responsibility; functional specialization as it relates to both the delegation of authority and the efficiency of the personnel; the correlation of departments and processes so that the activity of each person or unit contributes effectively to the activity of the whole and so that a balance is maintained; the standardization of materials, equipment, and processes; the utilization and preparation of reports; discipline; employment; training; wage policy, and relation of business to such external agencies as the National Government and State governments, public opinion, competition, etc.

In such a course in the elements of administration and organization the object should be to bring out for the student the significance of these factors in business. It would not be possible, nor would it be desirable, to give him in such a course a detailed knowledge of all these factors. Taking, for instance, the utilization and preparation of reports, it would not be the purpose of the course to train the student in the preparation of complicated reports for which an accounting training is essential. The purpose would be to show the value of such reports in the management of a business and to show how their preparation is controlled by their utilization for administrative purposes.

A considerable amount of illustrative material should be introduced in the course as each factor is taken up for discussion. In part this can be supplied by giving the student detailed descriptions of the organization and the administration of typical businesses. In part it can be accomplished by inspection reports. Neither of these methods is very satisfactory. The laboratory method is the most effective, but it can be used with difficulty and only in a limited way except for advanced students.

The special course in administration and organization as it applies to businesses engaged in foreign trade should comprise a study of the organization and administration of the different business institutions engaged in foreign trade with a view to understanding not only how they are organized and administered but why they must be organized and administered in a special way. It is particularly interesting and instructive to the student to show how the factors discussed in the elements of the business administration and organization are present in foreign as well as domestic business.

The business institutions to be studied will include the export commission house, the export merchant, the export forwarder, the manufacturer's agent, the export departments of businesses selling direct, export branch houses, advertising agencies that place advertising in foreign countries, foreign credit agencies, and trade associations.

It is important that the student taking such a course be acquainted with the marketing, credit and financing functions of an exporting business, because, as previously stated, the organization and administration of a business is in a large measure determined by the functions of a business and the conditions under which it is operated. The course might well be so arranged as to provide for the special treatment of the organization and management of such departments as purchasing, sales, advertising, credits, finance, shipping, invoicing, and accounting.

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The courses should preferably be semester courses and should be taken as late in the course of training as practicable.

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ACCOUNTING APPLIED TO FOREIGN TRADE.

By JOHN RAYMOND WILDMAN,

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The parties to foreign trade are the importer, the exporter, the transporter, the warehouseman, and the banker. Accounting applied to foreign trade must therefore be considered from the respective points of view of the parties.

The accounting relating to the importing and exporting of merchandise does not differ from other accounting except that it emphasizes the expenses incident to customhouse clearance, warehousing, ocean as well as land transportation, and requires a slight knowledge of foreign exchange.

The accounting relating to transportation and warehousing as industries must be differentiated from that which arises out of the relations between these parties and the importer and exporter, respectively. In no case is the accounting out of the ordinary except that of the ocean transportation company where the company is required to collect from foreign shippers in foreign currency.

The accounting for the banker must take cognizance not only of the usual banking operation but of the somewhat complicated foreign exchange feature.

A university course in "Accounting applied to foreign trade" must needs take into consideration the extent to which "background" courses such as the history of commerce, foreign trade and transportation, and theory of foreign exchange, are available and prerequisite. In the ideal curriculum they would be both available and prerequisite. In the majority of instances in which th

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suggestions which follow may be of use, it is probable that such courses will be lacking, hence the course in accounting should lay the foundation in history, economics, and finance, and perhaps take on more of a composite nature than would be usual in the ideal curriculum.

As outlined below, it should be offered two one-hour periods a week for two semesters. Stripped of the material other than that which is strictly accounting, one semester would probably suffice. In either case it should follow the course in general accounting. It should be presented as a combined lecture and laboratory course with liberal assignments of collateral reading.

OUTLINE.

Historical background leading up to the status of the United States prior to the World War. Effect of the World War on the commercial and financial relations of the United States. The Federal Reserve Act as a factor in developing the foreign trade of the United States. Outlook for the future of the foreign trade of the United States. The Webb Act.

The materials of foreign trade. The commodity needs of the United States. Imports for past five years. Foreign markets and opportunities. Exports for past five years. General and special characteristics of export commodities. The question of packing. Warehouse, port, and shipping facilities.

The agencies for the conduct of foreign trade. The exporter, as principal, as agent, the forwarder. The functions, relations, and charges of—the drayman; the warehouseman; the Government in the exercise of supervision and restrictions; the insurer; the ocean transportation company. The documents and shipping papers; bills of lading; consular invoices; shipper's export declaration; invoices of the drayman and the insurance company. The importer and his relation to the ocean transportation company; to the customs department of the Government; to the customhouse broker; the warehouseman; the local transportation company. The documents for imports; incoming bills of lading; customhouse entry blank; declaration; duty deposit; appraiser's report; release; duty adjustment; marine insurance; inward freight; and cartage.

Expenses characteristic of the exporter: Outward cartage (depository to the steamship pier); consular invoices; ocean freight; marine insurance; warehouse charges; forwarder's commission. Characteristic expenses of the importer: Ocean freight and marine insurance (usually included in purchase invoice); customhouse broker; duty; inward cartage.

Principle of the draft. Two-party drafts. Three-party drafts. Bookkeeping for drafts. The trade acceptance.

Specimen transactions illustrating purchases and sales of merchandise with importing and exporting expenses; drawbacks; packing costs and their relation to claims for goods damaged in transit; owned goods and consigned goods; goods sold on open account; draft; trade acceptance; conversion of invoices from English, French, German, Dutch, and South American currencies to United States currency. Statements of facts and problems correlating the above and introducing statements requiring conversion to and from branch offices and foreign agencies. Standard rates for conversion of accounts current. Incidental profit on exchange.

Theory of foreign exchange. Function of the foreign-exchange banker; exchange parities; conversions. International banking. Sources of exchange. Demands for exchange. The gold points. Expenses incident to the shipment of gold. The various kinds of exchange; bankers' long bills, short bills, cable transfers, commercial clean long, clean short, documentary long, documentary short, documents on acceptance, documents on payment.

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The foreign-exchange department; organization, function, records, relation to general organization of the bank. The foreign-exchange controlling account in the general books.

Operation of the books of the foreign-exchange department. The foreign-exchange ledger, with supporting books. Long and short bills purchased. Long and short bills sold. Bank acceptances. Trade acceptances. Letters of credit. Travelers' checks. Foreign money bought and sold. Arbitrage transactions. Reconciliation of foreign bank accounts, showing profit in each account. Statement of profit and loss for foreign-exchange department.

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STATISTICS AS APPLIED TO BUSINESS.

By HORACE SECRIST,
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Whatever motives may prompt one to enter business, the pecuniary one is undoubtedly potent. Business success is measured in terms of realized profit

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and to determine these accurate accounting is necessary. Accounting and statistics may be said to be the universal languages of business. Accounting, as a business tool, has been developed during the last dozen years and is now being used to determine costs in all their different phases. Statistics, as a method in business and as a companion to accounting, has had even a more recent but no less important development. Both have grown in spite of business distrusts and lethargy. The prejudice against statistics is to be sought more in their abuse than in their use, and this fact the business man is coming to see. No longer can business be conducted successfully by a rule-of-thumb method nor, accounts and statistics be ignored. Markets must be analyzed and production costs scrutinized. The facts of industry must be used as a basis for the determination of business policy.

Statistics in business may be used in the solution of two types of problems—first, those associated with internal, and, second, those associated with external conditions. Internal problems of production, of the supply and control of labor, of organization, etc., lend themselves to statistical treatment. In the same way problems beyond the sphere of individual businesses due to competition, relationship with the State, may also be studied and measured statistically. It is probably this latter side of business to which may be traced the increased use of statistics as a means of forestalling the consequences of keen competition and of measuring the results of State activity upon business.

What are statistics? Statistics may be defined, briefly, as numerical aggregates, enumerated or estimated according to reasonable standards of accuracy, collected in a systematic manner for a predetermined purpose, and placed in relationship to each other. Statistical methods may be defined so as to include all methods of analysis and synthesis by means of which statistics may be collected and used to describe or explain phenomena in their individual or related capacities. The goal of statistical studies is comparison, and this may relate to time, to place, and to condition.

The business man desires to compare his business with that of his competitor; to compare this year's operation with last year's; to compare one department with another, etc. To do so by means of statistics necessitates the use of aggregates or numerical facts in terms of standardized units of measurement. Imperfect measurements and crude units will not suffice. The unit of measurement in business, as in all science, is fundamental. In the physical sciences it is definite and standardized. In the business world, however, units are far less definite and their meaning dependent upon the purpose for which they are used. Comparisons are valid or invalid largely in proportion to the degree of accuracy and homogeneity which characterizes the units employed.

The statistical methods most commonly used by business men are tabulation and graphics. Tabulation serves the purpose of putting in lines and columns, under stub and caption headings, data classified according to relationships which are significant for the purpose in mind. Tabulation grows out of analysis and registers the relations between facts which are thought to be significant. Tables may be simple or complex, depending upon the amount of data which they contain and the complexity of the relations which they register. As a statistical device for classifying business facts, they are fundamental, but their appearance and complexity are oftentimes forbidding.

Graphics, on the other hand, at once arrest attention. They may be divided into two main groups—diagrams, in which lines, surfaces, and volumes are employed; and graphics proper, which consist of graphs and curves. Graphic devices are valuable because of their appeal to the eye. It is their power of suggestion which is important and, at the same time, dangerous. A diagram

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drawn out of scale, or a graph dissociated from the concrete data which it depicts, may be highly deceptive. Both may illustrate faulty data and in themselves never reveal the fact. Graphics rarely add new meaning to statistical facts. What they do is to throw into bold outline relationships which may lie concealed in tables. Their appeal is to the eye and not necessarily to the intellect, and they should be used with caution and circumspection. In business, where data are accurate and the desire to deceive lacking, graphic devices may be successfully employed, not only to give to executives and others vivid impressions of operating efficiency in the past but likewise to suggest or to forecast the future. Graphic devices are almost of infinite variety and may be used in almost all of the different phases of business activity. It is to be remembered, however, that they are secondary to the analysis which is required for the preparation of the material which is to be illustrated.

An example of the use to which statistical methods in business are put may be helpful. The business man is constantly in need of a barometer and forecaster of trade conditions. If he can know what the future will bring, if he can gauge his productive activity in line with industrial and financial conditions, his business will be stabilized and his methods made more profitable. He is therefore seeking to interpret the meaning of statistical facts growing out of trade relations, banking and finance, manufacturing conditions, stock and bond transactions, etc. In response to his needs, certain organizations have prepared and are marketing so-called "statistical services," the aim of which is to interpret fundamental business and industrial statistics. Until recently, little if any science has characterized such services.

Within the last two years, however, both a business barometer and a business forecaster have been worked out on scientific principles. The method of correlation, developed by Sir Francis Galton and perfected by Karl Pearson, has definitely been adapted to business data. To-day, not only is this method used by statisticians in the interpretation of business facts but also by psychologists in choosing and grading men, by agriculturalists in selecting farm products and farm animals, by breeders and others in improving animal stock in this and other countries. Probably no more promising field of statistical inquiry, so far as the interests of the business man are concerned, has been developed in the last decade than the application of the method of correlation to the development of business barometers.

Business, to be successful, must be scientific. Business men are coming keenly to realize this fact. A scientific tool which is available and may be of inestimable service toward the development of business, as a science, is the method of statistics.

Statistical studies should come relatively late in the student's work, since they are technical, presuppose a knowledge of business conditions, and for their successful perusal, require a certain degree of intellectual maturity. At least one-half year of four to five hours a week is necessary for an introductory course. A large portion of this time should be devoted to laboratory problems illustrative of the principles discussed in the text. It is well to duplicate in this part of the course, so far as can be done, actual statistical work.

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FOREIGN TRADE AND TARIFFS.

By F. W. TAUSSIG,

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A course of study looking to preparation on these subjects is best carried on in connection with a general college course, that course being arranged with a view to giving not only a general education, but special training and information on the particular subjects here mentioned.

It is not advisable to prescribe or recommend a rigid schedule or to indicate in detail at what stage and with what degree of intensive application individual topics are to be taken up. There should be training in such general fields as natural science, philosophy, literature, and especially English. In the field of natural science, chemistry is the most important subject. The main elements of a general education should not be neglected.

The subjects which relate more particularly to foreign trade and tariffs are: Modern languages, especially French, Spanish, German; Government (political science and international law); the principles of economics; commercial geography, commercial arithmetic, and economic history; money and banking, transportation, corporate organization and combinations, and like subjects in applied economics; the theory and practice of statistics; international trade; tariffs and tariff history; foreign exchange.

In general, the order in which these subjects may be profitably taken up is as follows:

1. Modern languages should be begun early, if possible, in preparatory schools, and should be studied to the point where an easy command of reading is acquired. It is desirable also to attain command of the spoken language, but this is not indispensable. Not all of the languages mentioned need be taken up. It is better to have real command of one than an ineffective smattering of two or three. The study of a language should ordinarily be continued through at least two years, and command of it tested and bettered by its use in the study of political and economic subjects.

2. Both government and economics should also be taken up early. If a complete college course of four years is planned, it is well to begin with government in the first year and follow with the principles of economics in the second year. There is no reason, however, against taking up both government and economics in the first year, provided that in that year, or in the subsequent years, there is not complete neglect of the other constituents of a liberal education. Commercial arithmetic may also be taken up in the first year.

3. After a year of economics and government a further study of more specialized topics should be undertaken. Among the topics of special importance in economics are commercial geography; economic history, and especially the economic history of modern times; transportation; money and bank-

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ing; corporate organization and corporate finance, including combinations and public utilities. It is not necessary to take up each and every one of these subjects. A selection among them may be made. Commercial geography and economic history should, however, not be omitted.

The special subjects to which the preceding preparation leads, namely, the theory of international trade, tariff history and experience, and foreign exchange, need not necessarily be postponed to the last year or final stages. Nor need they be necessarily taken up as separate topics. They may be combined, in the third or fourth year of the college course, with some of the preceding subjects. Reciprocity treaties and international commercial relations may be undertaken in connection with tariff history. International trade, and tariff history and experience, may be combined in one course; or international trade and foreign exchange may be combined in one course. The combination and interrelation of the subjects must depend upon the facilities at the disposal of instructors and students. In the latter part of the course, at the same time with these economic subjects, it is desirable to undertake also a study of international law and international treaties, with special reference to commercial treaties.

A bibliography indicating serviceable books follows. The books first mentioned under each head are those most likely to prove useful to those who are unable to undertake a college course and may wish to prepare themselves by independent reading and study.

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TRANSPORTATION AND SHIPPING IN THEIR RELATION TO FOREIGN TRADE.

By GROVER G. HUEBNER,

Professor of Transportation and Commerce, University of Pennsylvania.

The first year of a four-year college course designed for students seeking preparation for the foreign trade need not contain any course dealing directly with transportation and shipping. To obtain the basis for specialized study later in his course, the first-year student can be profitably occupied with courses on the following subjects: Elementary economics, commercial geography, business law, government, accounting, and English.

In his second year the student can advantageously take the course in *railroad transportation* as many ocean cargoes need to be handled between ports and interior points by rail or rail-water routes. A course given two hours per week throughout the college year or three hours for one term may include the following topics: Origin and growth of the American railway system; the mechanism of a railroad; railroad capital; earnings and expenses; the freight service; the passenger, express, and mail services; the organization of the service; railroad statistics; interrailway relations; theory and practice of railway charges; and regulation in leading foreign countries.

Definite results may be obtained by adopting a good textbook and supplementing it with additional reading assignments and with lectures and class discussions.

If his roster permits, the second-year student may also be given his course in *ocean transportation and shipping.* It is desirable, however, that he be given instruction in the following subjects during the second year: Money and credit, manufacturing industries, advertising, marketing methods in the leading agricultural and manufacturing trades, additional English, and a foreign language.

During the third year the foreign trade student will, unless he has done so during the second year, take a course in *ocean transportation and shipping.* A two-hour per week course extending throughout the college year or a three-hour course for one term makes it possible to include a study of the following topics: Development and classification of sailing vessels, steamers, motor vessels, and unrigged craft; ocean routes; the Suez, Panama, and other maritime canals; the measurement of vessels and traffic; the business organization of steamship lines; ocean ports and terminals; the ocean freight service; passenger, mail, and international express services; marine insurance; relations between ocean carriers; relations between ocean and rail carriers; principles and practice of ocean freight rate making; aid by the Federal Government; navigation laws; Federal regulation of charges and services; aid and regulation by States and municipalities; freight and terminal charges; condition of the American shipbuilding industry and of the American marine; Government aid in foreign countries; and the merchant marine policy of the United States.

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As in the case of railroad transportation, a textbook is advisable as a basis for study. In addition there may be special reading assignments, lectures, and class discussions; and copies of the various ocean shipping forms should be provided so that the student may become familiar with them.

Either in the third or fourth year the student may profitably take a two-hour per week course in *railroad traffic and rates* so that he may obtain more detailed knowledge of freight rates and other charges; methods of rate making; rate structures; tariffs; classifications; routing; railway shipping regulations and freight services; and public regulation of railroads.

It does not seem necessary that the student of foreign trade need take more than the three transportation courses mentioned. His study of transportation and shipping in the third and fourth years correlates well with his courses in foreign trade methods; history of foreign commerce; industrial management; banking; corporation finance; salesmanship; international law; diplomatic and consular procedure; stock and produce exchange markets; marine insurance; foreign languages; history; political science; economics; and special courses dealing with the resources and trade relations of Latin America, Europe, Australasia, Africa, and the Far East.

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PORT AND TERMINAL FACILITIES.

By ROY S. MACELWEE.

Dean, School of Foreign Service, Georgetown University.

An understanding of the essentials of transportation, which is a large item in the cost of production, is even more necessary in foreign trade than in domestic trade. The question of transportation costs involves both operation and routing. In domestic commerce routing is primarily a matter of railroad rates. Every large concern should have its trained traffic manager to take care of this important item of costs. The need is more urgent in foreign trade as the costs are larger, the time element in deliveries of greater variation, and the quality of service to the foreign customer may fluctuate between greater extremes than in domestic business. Routing calls for a minute knowledge of the highroads of the world's commerce, as distance is a matter of transportation facilities and not of miles.

There are three links in transportation overseas: (1) Railway inland navigation and other land carriers at home and abroad, (2) ships on the seven seas, and (3) the link between land and water carriers, which is the port. The first two have been taught thoroughly and well as part of the higher education for business, but the port and terminal problem, which is at present the most urgent, the most neglected and the least understood of the trilogy, has received only casual consideration. The study of ports and terminals must be *par inter parem* with land and water transportation in any well-ordered curriculum.

The course in ports and terminal facilities was first given in an American university at the school of business of Columbia University, winter semester of 1917–18. As the course developed it became increasingly an analysis of efficiency methods in port design and operation, with examples drawn from the leading

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ports of the world as illustrations of the principles involved. These illustrations required a wide survey of the world's ports, which should give the future export merchant direct information. In particular the study in the course shows the merchant what is essential and how to go about further independent study. Many institutions are now (1922) giving entire or part-semester courses in the subject, notably Georgetown University School of Foreign Service registers 100 students in the courses upon ports and ocean transportation, and presents a 10 semester one full-year curriculum for training for the steamship business.

The course also sought to show engineers the business requirements and economic background of a port. The trouble in the past too often has been that able engineers have constructed wonderful harbor works which have not been an effective tool of commerce, not because of any lack of engineering efficiency but because of some subtle and elusive economic force.

It was evident that the time was not sufficient to cover the ground and a large amount of important material was not touched. However, it would seem more advisable to condense the material rather than to extend the course over two semesters. Also that the two courses on ports and shipping should each be of one semester given early in the curriculum for upper classmen, with a subsequent seminar of more serious study and investigation for graduate students. There is an almost untouched field for investigation and research affording suitable material in abundance for masters' and doctors' dissertations. But more important, from the larger standpoint, much serious work must be done within the next few years as our country needs just this kind of exact scientific knowledge to help solve the foreign trade and shipping problems which are so vital to its future welfare. A transportation seminar may well be under the joint supervision and leadership of two or three teachers. This would not exclude intensive special work by small groups with each teacher.

The question of textbooks is a difficult one. In the field of water transportation there are several excellent works. In particular, Principles of Ocean Transportation, by Johnson and Huebner, has recently appeared from Appleton & Co., New York. In the case of ports there are, however, some very good monographs for collateral reading. The most important are Prof. Edwin J. Clapp's "The Port of Boston," "The Port of Hamburg," and "The Navigable Rhine." All are published by the Yale University Press. There are several good works of the monograph type in German and French. Much more serious works on ports have been written abroad than with us, except for Prof. Clapp. The great mass of material on the subject is buried in reports and isolated articles. All these publications, with the exception of "The Port of Boston," have very little to do with the philosophy of ports in general, being more an interrogation of facts as regards some particular port. Mr. W. J. Barney, C. E., secretary of the American Association of Port Authorities, 110 West Fortieth Street, New York City, has recently compiled a bibliography of pamphlets and articles which is quite thorough, so far as works in the English language are concerned.[1] The bibliography is well ordered and grouped and should be a good guide for further study by serious students. Miss Hasse, of the economics room, New York Public Library, is collecting a reference library on ports. The publication of the Columbia lectures, mentioned above, affords a text for future study, but at best it can be only a fingerboard pointing the way to greater concentration on the subject by many inquiring minds.[2]

[1] Selected bibliography on ports and harbors and their administration, laws, finances, equipment, and engineering. New York, W. J. Barney. 1916.

[2] Ports and terminal facilities, with bibliography. By Roy S. MacElwee. New York, McGraw-Hill Book Co. 1918.

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COURSES IN COLUMBIA UNIVERSITY.

The threefold treatment suggested in the preceding paper on Ports and terminal facilities is described in detail in the three following courses,[1] namely, "Ports and terminal facilities," "Theory and practice of ocean transportation," and "Railway traffic and rates," offered in the extension division of Columbia University.

PORTS AND TERMINAL FACILITIES.

The object of the course is to lay down firmly the principles underlying the work which a port must perform as a coordinated and assembled piece of machinery to further our growing foreign trade.

A general introduction will show the types of seaports as to location and layout, with some historical reasons for the same and the dependence of a port upon its hinterland.

Miscellaneous package freight. The wharf, transit sheds, and movement by rail to the interior. Freight differentials in connection with port development. Marginal railroads, classification yards, handling c. l. and l. c. l. lots. Packages for local consumption. Trucking. The warehouse construction and physical connection. Cold storage and terminal markets for perishable food products. Inner harbor movement by lighter. Manufacturing plants, the industrial harbor, and the question of upland *v.* waterfront property. Movement into the interior by water. Barge terminals, mooring dolphins "in midstream." The river port and the river-port industrial harbor. Handling of specialized and bulk freight from ocean to river vessel or railroad. Four classes of passengers with their luggage. A waterfront may also be a place of beauty. Port administration and jurisdiction with particular reference to several successful port authorities. Fiscal aspects, fees, and dues. The free port as an institution. A brief review of American and foreign ports with their commercial bearing in the routing of exports.

THEORY AND PRACTICE OF OCEAN TRANSPORTATION.

I. *Initial problem.*—An exporter has various lots of merchandise which he wants to ship; 12 cases of gasoline engines for Liverpool, 1 case of parts for London, 10,000 barrels of petroleum for Bordeaux, an ambulance for Havre, a large consignment of rails, cars, and locomotives for Vladivostok. How will he go about it? He may do it himself, or turn it over to a forwarder. There are liners, tramps, private carriers, special service steamers; shipping papers and routine; shipping terminology; how ocean freight rates are made; ship brokers and agents; British coal exports and freight rates; ocean highways and routing; marine insurance and bottomry.

II. *Second problem.*—The export house decides to enter the shipping business and (1) to build and (2) operate its own ships.

1. Correlation of size, speed, economy of operation, and required service; types of special duty ships; shipbuilding and costs of construction; elementary principles of shipbuilding; standardized ships and ships built in series; growth of shipbuilding and present problems reviewed to forecast the future; oil age.

2. Operating problems and costs under American and foreign registry; history of American marine legislation; Government aids to shipping: Subsidies, mail payments, preferential duties, freight rebates.

III. *The Liner.*—Growth of the North Atlantic Ferry and the great ship lines; pools and combines; aids to navigation, lighthouses, life-saving, safety at sea; line service from American ports; railroad lines and "feeder" lines; reciprocal influence of labor migrations, shipbuilding, and ship lines; shipping conditions and outlook.

[1] From information circulars issued by Columbia University.

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RAILWAY TRAFFIC AND RATES.

This course is designed to meet the needs of traffic men employed either by railroad companies or by industrial establishments which receive or send out products by rail.

A description of the present railway system of the United States, an analysis of its work, and a study of the business organization of a railroad corporation will indicate the nature and extent of the railway service and the character of the machinery developed to perform it. A study of the functions and duties of an industrial traffic department will show the nature of the organization developed to purchase the services of the railroads and to represent the shippers in their ordinary business relations with the carriers.

The most important part of contact between railroad and shipper is the transportation rate. The first step in rate making is classification. The general principles of classification will be discussed and an explanation given for the necessity of applying special or commodity rates instead of class rates to many articles of traffic. Each of the three leading classifications of the United States will be analyzed, particular attention being given to the special rules and regulations of each. Problems of classification will be presented for outside investigation and class discussion.

The rules of the Interstate Commerce Commission for the publication and filing of tariffs, as given in Tariff Circular 18–A, will be fully discussed, and the construction of local tariffs, interline tariffs, and agency tariffs will be described.

Because of peculiar conditions of topography or of economic development, varying types of rate structures have come into existence in different sections of the United States. The chief feature of the rate systems of the eastern, southern, and western territories will be explained, and consideration given to the modifications brought about by the rulings of the Interstate Commerce Commission under the "long-and-short-haul" clause of the Mann-Elkins Act of 1910.

The use of freight shipping papers, such as the bill of lading, the arrival notice, the freight bill, the delivery receipt, and the waybill will be studied, and instruction given concerning the preparation of these various papers.

Special problems of freight transportation, such as car service and demurrage and freight claims will receive attention; a thorough study of the conference rulings of the Interstate Commerce Commission will be required.

Some time will be devoted to a study of the passenger, mail, and express business of the railways, and a comparison made of the rates and services afforded by the express and the parcel post.

The last part of the year will be given to the consideration of the present methods of the regulation of railroads by State governments and by the Federal Government. The reading of the act to regulate commerce will be required, and a careful analysis made of its provisions. An estimate of the effectiveness and adequacy of the present system of regulation will be presented and an attempt made to indicate what changes in the present methods of regulations are desirable.

MONEY AND CREDIT—BANKING—BANKING ORGANIZATION AND PRACTICE.

By CHAUNCEY RAY PORTER,

Secretary School of Commerce, Accounts and Finance, New York University.

The following outlines, with suggested texts and supplementary readings, refer to four courses which are considered essential in any thorough prepara-

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tion for foreign trade. In making up these outlines it is assumed that the college offering the training would have a fairly well-developed curriculum in business subjects, if not a separately organized school of commerce. It is assumed also that the students will have had at least a year of elementary economics before beginning these courses.

If the curriculum of any particular college is so arranged that most of the freshman and sophomore years are made up of so-called cultural subjects, it might not be advisable to spend as much time on the money and banking courses as is indicated here as being ideal. In such a case it would be possible to telescope the courses in money and credit and theory and history of banking into a one-term course of three or four hours a week. If this were done it might be better to use some book like Holdsworth's Money and Banking as a text, because this will give to the student under one set of covers a fairly comprehensive treatment of both subjects.

Banking practice and foreign exchange could be telescoped in the same way if this is necessary, but there is no one book which can be used for both courses.

MONEY AND CREDIT.

(Three hours a week, fall term, sophomore or junior year.)

Relation between money and credit; circumstances affecting the value of money and credit; index numbers; the rate of interest; effect of changes in money supply and value upon the rate of interest; types of money and monetary systems; monetary history of the United States.

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United States. Department of the Treasury. Bureau of the Mint. Report of the director.
——— ——— Circular no. 52. *See also under* Theory and History of Banking.

THEORY AND HISTORY OF BANKING.

(Three hours a week, spring term, sophomore or junior year.)

Classes of banks; operations of a commercial bank; the bank statement; loans and discounts; relation between the bank and the borrower; bank notes; deposits and checks; the clearing house; domestic exchange; bank organization and administration; banks and the Government; American banking before the Civil War; European banking systems; the Canadian banking system; banking in South America and the Orient; the national banking system; banking reform in the United States; the Federal Reserve System; State banks and trust companies.

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Kirkbride, F. B., *and* Sterrett, S. E. The modern trust company. New York, Macmillan Co., 1921. 540 p.
Laughlin, J. L. Banking progress. New York, Scribner, 1920. 349 p.
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BANKING PRACTICE.

(Three hours a week, fall term, junior or senior year.)

Opening an account; deposits; deposit record; paying checks; bank loans; collateral loans; real estate loans; establishing credit; bank accounting; depositors' accounts; the transit department; duties of officers.

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United States. Department of the Treasury. Comptroller of the Currency. Instructions relative to the organization of a national bank. Washington, Government Printing Office.
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FOREIGN EXCHANGE.

(Three hours a week, spring term, junior or senior year.)

Monetary systems of the world; rates of exchange; foreign remittances; bills of exchange; work of the exchange box; financing of exports; financing of imports; finance bills; arbitrage; gold shipments; exchange and the rates of interest; exchange and the securities market; sterling exchange; French exchange; German exchange; exchange with other countries.

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INTERNATIONAL BANKING AND FOREIGN EXCHANGE.

By IRA B. CROSS,

Professor of Economics, University of California.

In many universities the study of international banking and foreign exchange is made part of a general introductory course in money and banking, while in others where the subjects of money and banking are treated in separate courses it is discussed in the course in banking. Comparatively few institutions devote a semester solely to its consideration. The importance of the subject of foreign exchange was early recognized at the University of California, where almost 20 years ago Dr. Carl C. Plehn added it to the curriculum of the economics department of that institution. In the last few years other universities have done likewise.

My experience leads me to believe that international banking and foreign exchange should be given as a separate three-unit one-semester course and should follow the elementary work in money and banking. As the curriculum of an economics department is usually outlined, the beginning course in economics is given in the sophomore year. Students desiring to specialize in the field under discussion should therefore take the introductory work in money and banking during the first semester of their junior year, following it with the study of international banking and foreign exchange in the second semester.

The lectures and discussion should be based upon a textbook, of which we are having an increasingly large number published each year. An opportunity should be constantly afforded the class to ask questions, because the practices of foreign exchange are always difficult for beginners to understand. Exercises and problems should be assigned from time to time, so as to acquaint the students with the banking forms used, the different types of foreign exchange documents employed, and the methods followed in figuring the buying and selling rates of the various kinds of exchange.

As to the content of the course, it has been found advisable to begin instruction by devoting about two weeks to a discussion of domestic exchange. Students more easily grasp the principles underlying exchange transactions when the money of only one country is involved. This part of the course may well cover the following matters: The definition of domestic exchange; the agencies used in the settlement of accounts between merchants and others in different parts of the United States, such as bank drafts, money orders, acceptances (bank and trade), letters of credit, etc., and the advantages and disadvantages of each; methods of protest; indorsements; liability of drawer, drawee, and indorsers; and factors affecting rates of domestic exchange.

Then passing to a discussion of international banking and foreign exchange, the course readily proceeds along the following lines: The definition of foreign exchange; foreign exchange in theory; classes of bills of exchange and how they are used, such as, clean and documentary bills, drafts drawn against securities, bankers' demand drafts, bankers' long bills, letters of credit, travelers' cheques, express and postal money orders, cables, etc.; characteristics of the foreign exchange market, dealers, international banking relations, etc.; rates of exchange,

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par of exchange, methods of quoting exchange rates on various countries, factors making for fluctuations in rates; the gold movement, cause for export and import for gold, and the mechanism employed; how money is made in foreign exchange transactions; effect of the World War on the exchange market, and finally exercises and discussion of practices arising in connection with the actual buying and selling of exchange, conversion, expected rates of profits, etc.

A term paper involving a careful and detailed study of the foreign exchange relations of a particular country is of very real assistance to the student by enabling him to see more clearly how the principles discussed throughout the course apply in actual practice.

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INVESTMENTS—STOCK AND PRODUCE EXCHANGE—COMMISSION AND BROKERAGE PRACTICE.

By HENRY RAND HATFIELD,
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The study of investments has but recently found a recognized place in the curriculum of the commercial course. Considerable literature has appeared, but much of it makes no attempt at scientific treatment and is little more than meretricious advice as to how one can make a successful turn in the stock market. Even the more scientific and scholarly works, for the most part, discuss only American markets and conditions, and have only an indirect bearing on the problems of foreign trade. Thus, the standard text on investments, used by business houses, as well as by colleges, makes no reference whatever to foreign securities and markets, and one might infer from its perusal that bonds were issued by no Government other than that of the United States. But the war has done away with our isolation. Particularly in a course designed to

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train for foreign trade, foreign as well as domestic investments must be considered. This is true, not so much because dealing in foreign investments is in itself a form of international trade, as because the transfer of investment securities is one of the most obvious means of paying for imports. In the past this has been true to a minor degree. It has been a striking phenomenon during the recent war; it will probably be continuously important in future trade between America and Europe. Already the changed attitude has been typified by a series of articles published by the American Association of Social and Political Science under the title "America's changing investment market."

The course on investments should include the following matters: The form and characteristics of various types of investments; the basis of security in investments; and elements of investment value. The student should examine specific securities, making such investigations as are properly made by the investment dealer before undertaking to handle an issue. Such matters are recognized as a part of any course on investments. A course bearing on foreign trade should emphasize also the broader aspects of the investment market, such, for instance, as are brought out in C. K. Hobson's "The export of capital," and J. A. Hobson's "An economic interpretation of investment." Attention should also be given to the great financial movements so admirably treated in Mitchell's "Economic cycles." Caution must be taken lest the study of price movements degenerate, as in so many popular treatises, into a mere attempt to forecast profitable speculations on a margin.

The course in investments should follow courses in the principles of economics, accounting, statistical methods, and the mathematical principles involved in the calculation of net yield. This last-named subject is sometimes included in the course in investments. Preferably it should be given in a preliminary mathematical course being most conveniently handled in connection with the allied topics of annuities, depreciation, sinking funds, etc. A general survey of corporation finance is also preferably given as a prerequisite to, rather than as a part of, the course in investments.

Stock exchanges are necessarily considered in connection with the study of investments. The closely allied activities of produce exchanges have been more neglected in the college curriculum, although they are perhaps far more significant in relation to foreign trade. Foreign schools have given much more attention to the details of such organized markets than have the schools in this country. This is doubtless justified by the fact that in Europe the colleges of commerce have been preeminently training schools for foreign trade, while in America, foreign trade having been relatively insignificant, interest centered on the home market. But now, when training for foreign trade is imperative, the schools of Belgium and France may well serve as models. The Institut Superieur de Commerce, of Antwerp, founded in 1852, is one of the most successful as well as one of the oldest of such schools. Students in the third year are given a course dealing with the exchanges of London, Paris, Brussels, Antwerp, Amsterdam, Berlin, and New York. In addition attention is paid to the general markets of Egypt, Canada, South America, China, Java, Straits Settlements, and Ceylon. About one-fourth of the Belgians who have graduated from the Antwerp school are located in England, South America, Singapore, India, Tunis, Congo Free State, Japan, China, and Cuba. In addition to these, a very large number are located in other countries in continental Europe. With such an array of trained commercial emissaries, it is not surprising that Belgian foreign trade is so highly developed. No such program is attempted in American schools. If the United States is at all to rival Belgium in its relative standing in the world markets, it is necessary to furnish instruction in the organization, forms, and procedure of foreign markets.

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The technic of the organized markets—commissions, brokerage, etc.—is a matter which must be dealt with in connection with the study of the stock, produce, and other exchanges. This has generally been but lightly touched upon in American colleges, save as it relates to American practice. While the student preparing for foreign trade should not be encumbered with a mass of details which he can neither remember nor use, he should be informed as to the main features of trade customs in foreign countries, and should know where to look for supplementary details. Unfortunately, on these subjects there is a paucity of good treatises in the English language, and a still greater lack in those especially adapted to American students.

The subjects touched on above are best studied in the last year of the course in commerce. They require considerable background, and some specific preliminary training, as, for instance, that in mathematics. Not less than three hours a week throughout a year should be allowed for these subjects. This time should be exclusive of that devoted to cognate subjects such as banking, foreign exchange, etc., which may form separate courses and are elsewhere considered in this report.

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COMPARATIVE FINANCE AND TAXATION.

By GEORGE E. PUTNAM,
Professor of Economics, Washington University.

The subject matter of Government finance, now one of the well standardized courses of study in the curricula of most American colleges and universities, may be indicated briefly as follows:

I. Government expenditures: The difference between public and private expenditures; economy, regularity, and purpose in expenditures; the growth and significance of the expenditures of central and local governments in modern times.

II. Government revenues: (*a*) Revenues from public lands, the post office, and public industries; the conditions under which governments should engage in industrial undertakings; (*b*) fees, special assessments, and taxes as sources of revenue; the canons of taxation; the meaning of "equitable" taxation; proportional, progressive, and regressive rates; (*c*) the forms and incidence of taxation—property, income, inheritance, customs, excise, corporation, capitation, business and license taxes; the relative importance of these taxes in the fiscal systems of leading nations; problems of administration; (*d*) the value of current proposals for reform in the tax system and in the administration of tax laws; the single tax; the proper balancing of Federal, State, and local revenue systems in the United States.

III. Government debts (a source of *revenue* to be justified by the character of the *expenditure* contemplated): The history of national debts as to character, purpose, amount, and administration; industrial loans, deficiency loans, and war loans; bonds versus taxes in war finance; conversion and sinking funds; State and local indebtedness; restrictions on borrowing power.

There is an intimate relation between the study of Government finance and the general field of economics. The former is concerned primarily with public revenues, expenditures, and their administration; the latter may be defined as the study of the desires, efforts, and rewards of human beings engaged in the business of making a living or, more briefly, as the social science of wealth. Where economic science has to do with the wealth-getting and wealth-using activities of men as members of society, Government finance deals specifically with the economic relation of organized society to its individual members. And that relation is not to be ignored. When, by common consent, a government assumes the responsibility of operating a railroad, a postal service, a water plant (municipal finance), or of protecting its citizens, it is satisfying human desires in a field where private enterprise presumably has failed or is incompetent. It is the central authority to which certain responsibilities have been assigned so that they may be assumed for the benefit of all rather than for the benefit of a few. Again, the financial policy of a government may determine the channels of human effort in production, as when taxes are levied on the importation of foreign goods for the purpose of stimulating their production within the country. A government may indeed impose such onerous taxes on its citizens as to penalize materially their productive efforts. Finally, taxes are paid by individuals solely from the product of human industry, that is, from the shares of private income known as rent, interest, wages, and profits. These are the rewards men receive for their efforts, and out of these rewards a government extracts most of its revenue. If a tax system is carelessly devised, it will mean injustice and hardship to some while others will profit by escaping their share of the tax burden. In order to pass an authoritative judgment upon the justice or injustice of a particular tax or tax system with a view to preventing gross inequalities among taxpayers, one must have a firm grasp on the theory and principles of economic science.

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Government finance is thus a part of the science of economics, which in turn is but a part of the study of man. In a college curriculum the subject may be conveniently offered as a semester or full year's course of three hours a week to properly qualified juniors and seniors, that is, to those who have completed an introductory course in the principles and problems of economics. For those students who are seeking a general training in economics, a half-year course is probably sufficient. Those who expect to engage in public service should pursue the subject much further than is possible in one semester.

As a preparation for citizenship, public service, or commercial life, a knowledge of Government finance is fundamental. Taxation touches the economic life of every breadwinner, directly or indirectly, justly or unjustly; it is at all times a factor affecting the satisfaction of human desires, the expenditure of human effort, and the distribution of wealth; and it is a powerful weapon when used as a means of effecting social or economic reforms. Now that the World War has thrust upon governments greater financial responsibilities than ever before, the subject has come to have a new importance not only in the college classroom but also in the public press. Some of the larger problems are centered about the means of raising the necessary revenue without impeding proper business activity or giving rise to class feeling and gross inequality. It makes a good deal of difference, so far as the welfare of the masses is concerned, whether the financial obligations are met out of revenue from increased taxation or from bond issues, though but few appreciate the relative merits and demerits of either method. So important has the study of these public questions become that a number of universities now definitely prescribe government finance as a required subject for all undergraduates majoring in economics.

For those seeking a general knowledge of government finance, the following works may be recommended:

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COMPARATIVE CORPORATION LAWS AND FINANCE.

By CHARLES W. GERSTENBERG.

Director of Finance, School of Commerce, Accounts and Finance, New York University.

Since exporting from the United States will attract our larger industries chiefly, and since these are organized on the corporate plan, the man or woman who is about to prepare for work in the foreign field may well include in his or her studies the subject of comparative corporation laws and finance.

Two plans are ordinarily open to an American concern doing business in a foreign country: To form a separate corporation in the country or to apply for permission for the American company to do business there; to be sure

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a third method may be adopted, permitting a local concern to attend to the business as owner of the American concern's goods or as consignee, but the use of this method deprives to some extent the American concern of the absolute control of its own business.

Before any one of these methods of doing business in a foreign country can be selected, the business man will have to know something about how corporations may be formed in foreign countries, who may be the incorporators, burdens placed on ownership of the stock, and like questions. The restrictions on the ownership of property by foreign corporations must be considered. Always the tax laws must be studied carefully.

In certain countries and for certain purposes, it will be almost absolutely necessary to organize local companies. It must be remembered that the division of business organizations into partnerships and corporations holds good only for the English-speaking countries. In the Latin and Teutonic countries many other forms of association are in common use.

While it will not be necessary ordinarily to understand the intricacies of financing, since funds will be supplied by the home concern and no sale of interests in the foreign company will be sought to be made, the student should in a general way have some understanding of local laws pertaining to the forms of stock or other interests of ownership and to the conditions under which they may be issued.

Whether a concern operates a mere branch or owns a subsidiary, the local managers will have to understand the local laws governing the relation of creditor and debtor.

In some foreign countries the accounting of corporations is closely regulated. Laws pertaining to this subject will have to be studied, as will also the rules pertaining to the distribution of profits. Moreover, since corporations doing an extensive business in any country are likely to come into contact with insolvent concerns, the laws of bankruptcy and of reorganization will demand consideration.

Two methods of studying the subject are possible: The one, theoretically superior, is to study one phase of the law or of corporate financing at a time and then to compare the laws and practices of the several countries; the other method is the more practical and will probably commend itself to students, since it makes for economy of time, effort, and memory. This method consists of studying the entire subject of corporation laws and the practice of finance as they are found in a given country. As country after country is investigated, the same general outline may be used. Some such simple scheme as this may be followed:

I. Corporation laws:
   1. Organization—kinds and methods.
   2. Ownership—kinds, rights, obligations.
   3. Management.
   4. Relation to State.
   5. Taxes and reports.
   6. Insolvent corporations and reorganizations.

II. Corporation finance:
   1. Borrowing funds.
   2. Accounting.
   3. Declaration of profits.
   4. Special practices.

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In every case a study of foreign laws and finance should be based on a thorough understanding of the principles of American law and finance. Variations from the American standard will be readily understood and retained in the memory.

Unfortunately, few books have appeared in the English language dealing with the laws and practices of corporation finance in foreign countries. Many books, however, have been written in foreign languages, but they are not readily available for the ordinary student. In compiling the following short bibliography the author has had in mind the practical necessity of sticking as far as possible to the English texts.

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INSURANCE COURSES IN THE PREPARATION FOR FOREIGN TRADE WORK.

By Robert Riegel,

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The foundations of a foreign trade course are the subjects of broad scope which form a background for and an introduction to studies of particular phases of economic life. As the average student's time is at least fully occupied in college by approximately 24 hours of class-work per week, the first year is easily consumed by these fundamental courses. The second and third years include a continuation of some of this fundamental work, but considerably more time is available for general business courses more closely related to the future work of one who expects to engage in foreign trade, such as accounting, the monetary and credit systems under which business is conducted, the domestic marketing systems for important commodities, the general principes of merchandising, including advertising and manufacturing, organization and operations. These considerations explain why the subject of insurance is not generally met with in college courses before the second or third year.

At the conclusion of the second year the student has completed what may be called for the present purposes preparatory subjects and is free to concentrate

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attention upon such subjects as more directly pertain to his proposed calling. As concerns insurance, three hours per week may very profitably be devoted during the third year to a general course intended to explain the elementary principles of life, compensation, fire, title and credit insurance, and corporate bonding. All of these are valuable, if not essential, to anyone engaging in business, and particularly a business involving the use of credit, relations with employees, ownership and management of real estate, and commodities. Some transactions connected therewith are unavoidable in the course of business of a shipper, forwarder, export house, or vessel owner engaged in foreign trade. It is impossible in the ordinary college curriculum to require every student to take the three or four separate courses necessary to treat such subjects exhaustively, and yet it is desirable that all should be acquainted with the more important phases, an acquaintance which is furnished by a general insurance course of three hours per week.

The fourth year gives the opportunity to direct attention to two forms of insurance which are of primary importance to the exporter, shipper, forwarder, and shipowner—marine and fire insurance. With the aid of considerable outside reading, especially in connection with fire insurance, a course with two hours per week class work will probably suffice. This will consist of an equal amount of lectures and quizzing upon a text and assigned readings. In the case of marine insurance the most satisfactory plan has been found to be the use of a text supplemented by lectures and discussions. Attention must necessarily be devoted to subjects important from the viewpoint of the insured rather than the insurer, but there is danger of overemphasizing this method of treatment and omitting from consideration some subjects which are in an indirect way very intimately connected with the interests of the insured. It is evident that an ideal method would be to prepare the separate courses to meet the needs of those enrolled in such courses, but it is equally obvious that there must be a reasonable limit to the number of courses given.

The above statement is written not only with ideal conditions in mind, but with a view to what can apparently be accomplished under existing limitations. Appended is a bibliography of the more necessary and accessible publications on marine insurance.

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STUDY OF FISCAL AND CUSTOMS LEGISLATION.

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This subject is one of the most important pertaining to the curriculum of a school of commerce and finance. We see more and more manifestations of governmental regulation of international commerce; and it is necessary that those who propose to fit themselves for international trade should be equipped with a general but accurate knowledge of modern tendencies in governmental regulation, in order that later they may not work under a misunderstanding.

The regulation of international commerce from the national point of view, in such a way as at one and the same time to protect the public interest and to interfere least with the conduct of private business, has become a science. At the beginning, such regulation represented no scientific principle. The purpose of regulation of trade was largely the natural one of securing revenue. The Government intended to make commerce from abroad bear the burden of governmental administration, as far as compatible with the requirements of domestic trade. We are familiar in this country with the ancient slogan "Let the foreigner pay the expenses of our Government."

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Because of its purpose to secure revenue, public regulation of trade for a long time could not be carried on in a scientific manner. It proceeded from one detail to another, and almost never worked from a basis of principle. Through long years, governmental regulation of trade grew simply by the process of accretion. There is nothing so difficult as to overcome routinary and traditional methods of doing things; and rational reform of governmental regulation of commerce has been no easier to achieve than other improvements. Nevertheless, the struggle for simplicity has gone on, and with it a struggle for uniformity. These years of preparation for our present interest in the true nature of fiscal regulation of trade have seen a long and interesting series of efforts at international cooperation. International congresses of statistics, trade, and commerce have been held in Europe during the last 40 years, and the subject matter of the European gatherings has in turn formed a large part of the program of conferences in the United States and Latin America. As one of the most recent examples of this I may cite the International Conference of Commercial Statistics, held at Brussels in 1913, which prepared a commercial statistical schedule for international use. This schedule was adopted by the International High Commission of the American Republics at its first general meeting in Buenos Aires in April, 1916, and it is likely that it will be adopted before long as the standard of commercial statistics throughout the hemisphere.

A course of study in the field of fiscal legislation might be outlined somewhat as follows: Documentation; consular activities; port dues; methods of appraisal; classification, for practical and statistical purposes.

Obviously, some of these topics are of less importance than others. The subject of port dues has much less significance than those of classification and appraisal. The mastery of the technic of customs documentation is simpler than a grasp of the duties of consular officers. The student must be well grounded in the underlying theory of tariff legislation and fiscal regulation, and this presupposes some fair knowledge of contemporary economic theories and political tendencies, as well as of the economic history of the United States. Mere study of the documents will hardly help him without this broad foundation of principle.

The class should become acquainted with types of official invoices and manifests, taking up at the same time, by way of comparison, railway and shipping companies' invoices, manifests and bills of lading. Collections of these consular documents may be secured directly from the consular representatives of the several nations, but they are to be found in various public documents and trade cyclopedias.

The consular regulations of the United States and summarized translations of the consular regulations of the leading commercial countries should be put in the hands of students. Even though it may not be necessary to require a detailed knowledge of all the regulations, the more important consular duties should be thoroughly described.

The difficulty in studying the subject of port dues arises from their endless variety in terminology, incidence, and jurisdiction. The requirements of the larger ports should be studied in detail, and so far as the United States is concerned, reference should be had to the excellent report entitled, "Ports of the United States," by G. M. Jones, Miscellaneous Series No. 33, Department of Commerce, Washington, 1916. The latest edition of the navigation laws should be studied in this connection.

Of course, for the study of methods of appraisal, thorough and intelligent use must be made of the United States Customs Regulations. A codification of these regulations is in process, and the study of our customs system will be

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greatly facilitated when this work shall have been completed. Reference may be made in this connection to the excellent reports published by the Department of Commerce and Federal Trade Commission in recent years.

The report of the Inter-American High Commission, Foreign Trade Council, of the American Manufacturers' Export Association, National Association of Manufacturers, the International Congresses of Chambers of Commerce, and many of the excellent publications of the Pan American Union should be at hand in carrying on such work. A good collection of the translations of the tariff laws of the world is also essential.

As to classification, the student must be shown how systems of classification were constructed, or more accurately, how they have been developed in the way most convenient for administrators and legislators. Frequent and careful use of tariff statistics is the best method of teaching the system of statistical classification, and the student should be introduced to all the official statistical publications of the leading commercial countries of the world. It will be worth the instructor's while to secure as complete a collection of the most recent of these official bulletins. He should note that they are sometimes to be found as appendices to the reports of the ministers of finance, rather than as separate publications. Tariff classification, so far as the United States is concerned, might profitably be studied in the reports of hearings before the Committees on Ways and Means of the House of Representatives, and on Finance, of the Senate.

Some slight knowledge of the fiscal administrative codes which obtain in many countries governed under the system of modern Roman law will be desirable, if the student expects to understand the by-no-means-simple procedure occasionally necessary in fiscal cases.

The bibliography of fiscal and customs legislation and regulation may be divided into the following three groups:

I. Texts of national legislation and regulation.

II. Texts of international agreements and the proceedings of international conferences on the uniformity of legislation and regulation.

III. Manuals and treatises of administrative law.

There follow a few titles, arranged in accordance with the foregoing. The list is merely suggestive, even for the United States. Attention has been given to Latin America rather than to Europe, because of the fact that the fiscal literature of Europe is well indexed in such bibliographies as that contained in Prof. Taussig's manual.

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DOMESTIC AND FOREIGN COMMERCIAL POLICIES.

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The purpose of the courses on "Domestic and foreign commercial policies" should be:

1. To bring out clearly the relationship between the public and the private aspects of business.

2. To determine the aims and the limitations of governmental trade-shaping activities.

3. To consider the methods and agencies used by the State and by other public authorities in order to control and to promote commerce.

4. To give students a comprehensive understanding as to what business men must do or refrain from doing in order to conform to governmental requirements at home and abroad, as well as to familiarize them with the functions and the work of those institutions from which merchants may obtain guidance and assistance in the pursuit of their legitimate business enterprises.

The course on domestic commercial policies should begin with an analysis of domestic trade and with a discussion of its various forms (wholesale, retail, mail order, etc.) in so far as these give rise to and are affected by legislative enactments, judicial decisions, and administrative acts. The instructor, keeping in mind that emphasis must be laid on policies and not on technical details, should then review the measures which have been passed for the purpose of insuring the free play of competition and of preventing unfair methods and frauds. Some of the topics to be discussed are these: The regulation of markets, of stock and produce exchanges, of warehouses and elevators; classification of grain and of cotton into grades; the crop-reporting system; provisions regarding standard weights and measures; pure food and drug legislation; protection of patents and trade-marks; antitrust legislation; decisions regarding price maintenance, use of trading stamps, misleading advertising; false statement laws; bulk sales laws; the bankruptcy act. The concluding part of the course should consider chambers of commerce and similar nontrading associations of merchants as well as various governmental bureaus, departments, and commissions dealing with domestic trade.

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It is desirable to have two courses on foreign commercial policies. In the first course the nature, the significance, and the essential characteristics of foreign commerce as distinct from domestic trade should be brought out. The subject matter may then be presented in the following sequence:

(*a*) Tariff as one of the most important manifestations of a country's commercial policy; changes in theories and in policies (mercantilists, physiocrats, classical and national schools of political economy); balance of trade versus fiscal balance; arguments for free trade and for protection (economic, social, political, military); protection of agriculture, of manufactures; different kinds of customs duties; import, export, specific, ad valorem, countervailing, etc.; incidence of taxation by means of customs duties; bounties; prohibitions of imports and of exports; the making of the tariff; tariff commission; tariff systems—autonomous, general and conventional, general and preferential, maximum and minimum; commercial treaties—their nature and scope; European and American interpretation of the most-favored-nation clause; dumping.

(*b*) Navigation policies; the merchant-marine question; regulation of shipbuilding and of shipping; shipping subsidies; discriminating duties on vessels and their cargoes; traffic agreements of ocean carriers; Government ownership of ships; improvements of rivers and of harbors; control of terminal facilities; port charges; taxation of shipping.

(*c*) Trade-promoting activities and institutions in foreign countries and in the United States; consular service; duties and functions of consuls, of commercial attachés, of trade commissioners; legislative committees and executive departments and bureaus devoted to the furthering of foreign commerce; the organization and the activities of the Department of Commerce; cooperation for the development of foreign trade; Federal Reserve Law and trade connections; branch banks in foreign countries.

(*d*) Regulations affecting commercial travelers, samples, trade-marks, credit, and collections.

The second course should be historical in character and should consider changes in the commercial policies of the United States and of the leading foreign nations. Study should also be made of the after-war commercial problems and of the ways to solve them. If no separate course is offered on customs administration, additional topics to be treated are the work of the custom-house, bonded warehouses, drawbacks, etc.

A half-year semester, three hours a week, should be spent on each course. The time for giving these courses would depend upon correlation with other parts of the curriculum; however, under no circumstances does it seem advisable to give them before the junior year. The course on domestic commercial policies should precede and should be regarded as a prerequisite for the first course on foreign commercial policies. If the subjects are taught in the junior year, the second course on foreign commerce may be given either concurrently or in the senior year.

The students undertaking this work should be well versed in principles of economics and have a knowledge of economic geography and of economic history. A careful coordination of these courses with those on commercial law, on fiscal legislation, and on business organization and operation is highly desirable in order to avoid unnecessary duplications.

The courses may undergo contraction or expansion in the presentation of certain parts, dependent on the fact as to what additional courses are offered on such topics as diplomatic and consular service, customs legislation and administration, ocean transportation, credit and collections, and exporting and importing.

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Students should be required to read the current literature on the subject; reports, bulletins, periodicals issued by the Government as well as by trade organizations and associations.

There is no single volume which can be used as a text for the outlined course on domestic commercial policies. The subject may be covered by referring the students to various parts of the books listed below.

For the first course on foreign trade, Fisk's "International Commercial Policies" gives a concise and systematic presentation of some of the important problems to be discussed. The first edition of this book was published in 1907 and it is in need of a revision, a number of its chapters being out of date. Taussig's "Tariff History of the United States" may be used for one part of the second course on Foreign Trade, the other parts to be covered by means of assigned readings.

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PART II. GOVERNMENT.

THE CONSULAR SERVICE.

By EARL WILLIS CRECRAFT,

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The examinations which are given by the State Department to applicants for positions in consular service include the following subjects:

I. International, maritime, and commercial law.
II. Political and commercial geography.
III. Arithmetic.
IV. Modern languages.
V. Natural, industrial, and commercial resources and commerce of the United States.
VI. Political economy.
VII. American history, Government and institutions.
VIII. Modern history (since 1850) of Europe, South America, and the Far East.

It will be seen from this that no single course of lectures which a school might offer will cover thoroughly all these different subjects. Each subject in the above list is more or less a special subject in itself. The faculty of a large school of commerce is composed of specialists in each of these lines. Therefore the student who would prepare for the consular service would find it necessary to take a number of courses under different instructors instead of expecting to find one course answering for all.

A student who wishes to prepare for the consular service should enter a school of commerce or department of economics and pursue studies in those courses which most nearly fit the prescribed subjects which are made the basis for the entrance examinations at Washington.

In meeting the requirements in international law, several universities offer courses on the principles of international law and an advanced course in treaties and the treaty-making power. In addition to these courses, there are two courses of one semester each which bear directly on the organization of the consular and diplomatic service and the rights and duties of diplomatic and consular representatives in the protection of citizens and property abroad.

Mr. Wilbur J. Carr, the Director of the Consular Service, has perhaps correctly stated the true situation relative to the inadvisability of any university expending a large amount in establishing a school for the consular and diplomatic service. In discussing this subject at the Conference on Training for Foreign Service, held at Washington, December 31, 1915, Mr. Carr said:

I think it may well justify serious consideration as to how many courses you can maintain in your universities—that is, courses additional to the regular courses in the university—for preparation for this particular work; but there is a way in which I think our need can be met, and very much greater needs be met, by taking advantage of and meeting the condition which is confronting us now with reference to the training of men for foreign service in connection with our export trade, due to increased business with other countries through private enterprise. So far as I know, the eligible men for that kind of work are very few, and in this connection the educational institutions of this country are confronted with a problem which they will have to meet. From what I

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have seen of the work at Harvard and in the school of commerce of New York University, it seems to me that it would be perfectly possible to combine a course of training for the American Consular Service with a course of training for service in export trade, and have sufficient demand for those courses to enable them to be maintained, or at least, a reasonable part of them.

I am convinced that the university training you would give a man who is to be an export manager or an international banker, or who is even to be a salesman abroad, is essentially that which would meet the requirements of the Consular Service. I do not see why it would not furnish the foundation for the making of a good consul, plus some specialization in international law and in the history of treaties and similar subjects. It seems to me we have there the basis of a work which can be done and will meet our needs and those of the new field of foreign commerce.

The following courses in political science in schools of commerce will be seen to coincide with the list of subjects which are made the basis of the consular and diplomatic examinations at Washington:

I. International law.
II. Treaties and the treaty making power.
III. Rights and duties of consuls.
IV. Diplomatic protection of citizens and property abroad.
V. Principles of accounting.
VI. Spanish, French, or German.
VII. Industrial and commercial geography.
VIII. Political economy.
IX. Commercial law—law of contracts.
X. Commercial law of Spanish America.
XI. American government.
XII. Europe since 1870.
XIII. Current international problems.

The completion of this program would be representative of approximately two years of work. It is not necessary for special students to hold strictly to a set course for three or four years. Special students may enter and take whatever courses they prefer. However, I should personally recommend in preparation for the Consular Service that the student get at least two years of general collegiate work before beginning to take the specialized subjects which have been mentioned above.

One difficulty about the whole matter is that the salaries of the lower grades of the Consular Service are low. Men who have had a good start in the business world are not tempted by low salaries. Business experience is no doubt a help to the commercial representative of our Government abroad. According to Mr. Carr it is not absolutely essential that the applicant for a position in the Consular Service have business experience to his credit. The right kind of educational equipment and personality are the prime factors.

But while commercial training should be emphasized in fitting men for the Consular Service, the political, diplomatic, and governmental side must also be kept prominent. This is where international law, diplomatic history, treaties, and political science in general are undoubtedly important branches of training not only for the consul, but for the secretary of legation and for the commercial attaché.

It is frequently advocated that business experience be required, however. Mr. John Hays Hammond, in an article published in the Forum for July, 1916, advocates business experience not only for consuls but for diplomatic representatives. He advocates the selection of consuls with "due consideration to be given for their future service in the diplomatic corps; so that ambassadors may be chosen from men who have attained distinction in the Consular Service."

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With all respect for the wide experience and information with which Mr. Hammond writes, it will not detract from the force of his point to add that a business man who finds himself suddenly placed in an important diplomatic position will find himself seriously handicapped unless he is informed in the subjects of history, economics, international law, and diplomacy. It is appropriate, therefore, that the Department of State has attached much weight to these subjects in the entrance examinations.

One very important feature in addition to the preceding could be introduced into the university course of training. This would be the inauguration of a system of having consuls who return to this country on leave lecture before classes which have students enrolled in preparation for the foreign service. This would place before students and the regular instructors of the university first hand information in regard to the commercial opportunities where the consuls are located abroad. This would be in line with the plan offered by the National Foreign Trade Council relative to recommending that consuls returning on leave to this country appear at business conferences and conventions for the purpose of acquainting these bodies with business opportunities abroad.

Officials of the State Department have recommended that funds be provided to enable consuls to attend such conventions. The writer of this article desires to express the hope that, as this practice becomes perfected, returning consuls will visit educational institutions where conveniently located, and address classes of young men who are preparing for foreign service. This practice would be a great incentive to the work of the lecture room. If chambers of commerce are to secure the services of our consuls when they return for a temporary visit, there seems to be no valid reason why they should not be provided with the funds to enable them to appear in the more important and centrally located schools of commerce where men are preparing to enter the identical kind of work in which they themselves are engaged.

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CIVICS.

Immigration and Citizenship—Social Legislation.

By HATTIE PLUM WILLIAMS,

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I. *Immigration and citizenship.*—It scarcely seems necessary to suggest that a knowledge of the composition and movement of the population of a country is

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fundamental for those engaged in foreign service of any kind. Upon the degree of mobility of the population within the country will depend very largely the desire for new goods and the facilities for distributing them, while its movement in and out of the country will provide opportunities for commercial intercourse and necessitate diplomatic relations. Students of immigration who regret the overemphasis of the economic factor in this problem nevertheless recognize that economic opportunities are the greatest force in modern times in drawing people into foreign lands, and that trade currents can follow migration grooves as naturally as they follow the flag. No one has yet studied immigration as a world phenomenon. It is still thought of in provincial terms as a problem peculiar to the United States, and not as one with which every country struggles more or less.

The supply of and demand for inhabitants is a basic fact not only in the movement of population but also in the development of markets and especially in the future political relations of the countries of the world. In the Far East a thorough and sympathetic understanding of the problems arising out of the pressure of population, and constructive cooperation with those countries in formulating a program of relief, will go far toward averting a clash of interests between East and West. In Russia and the South American States, where undeveloped resources wait upon an increase in population, the problem is the reverse, but no less momentous for the peace and prosperity of the world.

No less important is a recognition of the various racial groups which make up the political unit or State. Everywhere abroad, where assimilation is less complete and considered less essential than in the United States, foreign groups are zealous for the recognition of racial distinctions. One can readily imagine the loss of good will which might follow the refusal to take note of this race prejudice and to classify properly various racial groups.

Keeping in mind the purpose of the course outlined above, the following brief syllabus is suggested for Latin America, the Far East, and Russia:

1. Distribution and density of the population.
2. Movement of population—
    1. Birth and death rates, increase of population and distribution of increase.
    2. Migration—
        (*a*) Internal movement of population—
            (1) Between States—causes.
            (2) Between rural and urban districts.
            (3) Causes for immobility where it exists.
        (*b*) Emigration—causes; countries sought; attitude of government and public opinion toward; legislation against; treaties controlling; detailed study of such movement to the United States.
        (*c*) Immigration—sources; causes; character; effect on country; social status of immigrants; governmental encouragement; land policy; immigration laws; colonization societies.
3. Elements in population—
    1. Native stock—racial classification.
    2. Foreign stock—importance to national life; assimilation with native stock; attitude of foreign groups to each other; admission to political rights; citizenship laws.

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II. *Social legislation.*—If one were to single out the factor most essential to the success of those engaged in foreign service, he probably would be correct in designating it to be the ability to acquire the viewpoint of the people in whose country such agents are located. In this respect, foreign service differs from domestic, if not in kind, at least in degree. It is not merely getting the viewpoint of another personality in his own group but understanding those who have different historical backgrounds, customs, and moral and ethical standards.

This viewpoint is secured partially by a study of the language of a racial group, but ordinarily the attention of the student is so engrossed by the physical process of learning to read and speak that he loses all appreciation of the soul of the people which language is supposed to express. History offers another possible avenue of approach but the emphasis upon the political and economic phases to the virtual exclusion of institutions and laws gives an inadequate idea of the culture and ideals for conduct of the people.

The chief reason we object to certain groups of foreigners in our midst is not primarily because they are racially inferior, and therefore threaten to dilute or degrade our American stock. Rather is it because their business, moral, and ethical standards are different from ours, and we therefore fail to understand their conduct. Measured by our ideals they seem to lack integrity, and other primary virtues; while we in turn need to be interpreted to them, lest rudeness and boastfulness be our outstanding characteristics. A study of the social institutions of a people and the legislation controlling them will help in understanding the standards which control the conduct of foreigners.

The following types of social legislation should be familiar to every student:

Laws respecting living and working conditions:
- Factory legislation—
  1. Sanitation.
  2. Hours of labor.
  3. Wages.
- Social insurance.
- Housing conditions.
- Health legislation.

Laws respecting women and children:
- Conditions under which they may work.
- Education—
  - Schools—compulsory laws; illiteracy.
  - Press—freedom of.

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Laws respecting the family:

Marriage and divorce.

Status of women and children.

Laws respecting special classes:

Dependent—Unemployed, homeless children.

Defective—Feeble-minded and insane, deaf, blind, crippled.

Delinquent—Juvenile delinquency, adult crime.

The work outlined above must be conducted as lecture courses for the simple reason that there are no texts which adequately cover the material. Particularly for the latter are sources so greatly scattered that a satisfactory bibliography is not possible in the short space available. Since a large fund of knowledge is helpful to a proper appreciation of these subjects, they should not be given before the second half of the third year.

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INTERNATIONAL LAW.

By GEORGE G. WILSON,

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The minimum requirements should be:

1. International law, the equivalent of three hours a week in class for one year.
2. International relations, covering diplomatic and other policies, three hours per week in class for one year.

Whenever possible the above studies should receive attention to a total amount of 18 hours, or the equivalent of 6 hours a week for 3 years. The emphasis upon different aspects should be varied according to the special line of work which the student is planning to enter. These studies are best adapted for students of junior and senior grade who have had previous training in history and political science and for graduate students.

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COMMERCIAL AND MARITIME LAW.

By L. Russell Alden,

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Commercial law, in one form or another, governs almost all of man's activities on this globe, and when they are pursued on the three-fourths of the earth that is sea, they are controlled in their maritime aspects by the maritime or admiralty law in addition. Is it not universally true, then, that all men,

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because they are directly concerned, ought to know the general principles of this law? Success in business, moreover, is conditioned on the establishment of mutual respect and confidence between contractors, and the stranger the contractors are to each other the more imperative it is that each party overcome the other's possible suspicion by as rigid a respect for the rights of that other as his insistence upon his own rights is vigorous. Is it not equally true, then, that ignorance of the laws governing trade must hamper him who would trade with those of his own nationality and language and, in increasing degree, him who would trade with foreigners to his land, his speech, and his native viewpoint, customs, and peculiarities? Every man, and especially he who would engage successfully in foreign trade, should know the legal effect of his acts and conduct his business with full knowledge of what he is doing when he incurs obligations or acquires rights.

Commercial law is a name loosely given to those branches of the law which govern everyday transactions in business, such as the making of contracts, the use of negotiable paper, the formation of business associations, etc. One would think that a working knowledge of such branches of the law would be common, at least among so-called "business men," if not among the people at large, and yet every lawyer in active practice has had driven home to him again and again the appalling ignorance of otherwise wide-awake and well-informed business men as to the legal effects of entering into a partnership, for example, or of indorsing the check of an out-of-town visitor in order to accommodate him by enabling him to cash it at the host's bank, of responding by letter to an offer of contract made by telegram, of surrendering a deed in exchange for purchase money paid by uncertified check, of depositing trust funds committed to his care to the credit of his personal account in the bank, or of many other common acts too numerous to mention. Far more than pessimists could be driven to admit or optimists would claim, the great majority of men and women are fairly honest, considerate, and accommodating in their dealings with each other. Were it not so, our courts would be overwhelmed with trivial disputes over questions highly difficult of decision, and every man would have to be a lawyer, whether he would or not, or else speedily contribute another example to the doctrine of the survival of the fittest. As it is, the calendars of our courts are congested with preventable litigation, and thousands of dollars and unmeasured assets in business confidence are daily squandered through popular ignorance of the most fundamental principles of commercial or business law.

What do we advocate? Universal required instruction in business law in all high schools and colleges. Our problem here is particularly with colleges, where the treatment of the subjects taught should, of course, be more thorough than among the young pupils in the high schools and suited to the maturity of the students taught. This instruction, in the academic and scientific departments of our universities, should not and can not be either a substitute for or a competitor with the more arduous and thorough training of the students in the law schools who intend to follow the law as a profession; nor can it be given the same number of hours as are allotted to the same subjects when taught in the law schools. But it should be allotted at least two hours a week for two full years, if it is expected to teach anything beyond contracts and negotiable paper, and particularly if the course is designed not only for those who seek a general knowledge of the law as a matter of education or who need it to meet the requirements of examinations for the consular service, but also for engineering students or those who may intend an active commercial life. And this should be the minimum. If more hours can be allotted to this

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field of study, there will be no difficulty in using them, and that without inviting any well-grounded objection that a full law-school course is being built up in departments of arts and sciences. As to the years in which it should be offered, they should be the two final years in the course. Much of the law is extremely technical, and for its proper understanding demands as do few subjects maturity of mind and trained powers of reasoning.

Now, as to the method of instruction. In our best law schools we have abandoned the old textbook method and have adopted the Harvard case system or laboratory method of teaching the law. An exclusive use of this method may not be found practicable in view of the limits in time and the extent of the field to be covered in these law courses in colleges of arts and sciences. But, so far as it can be employed, it should be. The ability to state from memory abstract principles of law is of little practical use to one if he is unable to tell which principle he should apply to a given string of confused facts suddenly calling for action. Legal difficulties, as they arise, seldom bear marks of textbook classifications upon them, and he who essays to solve them applies the right or wrong principle at his peril. The instructor should bend every effort to make his instruction, by specific, concrete, everyday illustrations and examples, practical in the highest degree.

A word in conclusion on the subject of maritime or admiralty law. Students aspiring to the consular service and those intending to engage in overseas commerce need a general understanding of the laws of the sea. They may never be called upon to display a knowledge of the steering rules or the laws concerning collusions, but they should know the principles and rules governing charter parties and contracts of affreightment, general average and marine insurance, salvage and the other main branches of the admiralty law governing daily transactions occurring in every port and in connection with every sea venture, principles and rules differing radically from those governing similar transactions occurring on the land. Not much time can be given to such a subject in the kind of course here under discussion, but, by judicious selection of matters to be treated, it can be covered, and that fairly well, in 8 or 10 periods.

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THE ECONOMIC BACKGROUND OF MODERN WORLD POLITICS.

By ABBOTT PAYSON USHER,
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The phrase "world politics" is unfortunately vague, and in this country would scarcely possess even the moderate degree of precision of meaning that would be suggested in Europe. The primary economic questions in world politics center around tariff problems and expansion. Expansion may involve actual acquisition of dominion or merely peaceful penetration of a commercial character. Both of these subjects may seem to be rather special topics, but it is impossible to discuss them in that spirit. The great issues in economic policy are most clearly joined on these questions, so that the study of world politics really involves discussion of the general principles of economic statesmanship. If all question-begging implications are to be avoided, one must endeavor to discover whether there are any general principles that should be recognized by all statesmen. It has long been the ambition of thinkers to formulate principles of action in high matters of state that should, at the least, be more nearly right than the principle or absence of principle that disfigures much political activity.

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This discussion of general principles becomes in fact a study of three definite systems of economic statesmanship—mercantilism, bureaucratic collectivism, and liberalism. Each of these general terms must be interpreted in a broad spirit, and many diversities of thought will be found under the general cover of each general type, but there are grounds for making these very general distinctions. Mercantilism is a type of political thinking that is essentially empirical and naive. It appears most characteristically to-day in the crude expansionist policies that appear in all countries. The other types both purport to be "scientific" systems of policy; one is collectivistic and in many cases autocratic, the other is disposed to emphasize the mutual interdependence of society and the individual. Although the distinctions between these systems of thought can easily be exaggerated, the collectivistic theory really turns upon the assumption that the leaders of the State have the power to accomplish what they will; it is based upon a theory of freedom of the will; the liberal theory, on the other hand, is based upon the idea of subordination to laws of nature, and assumes significant power of accomplishment only when action consists in an application of natural law. The liberal theory is at once an attempt to explain the past and to guide statesmen with reference to the future; it portrays social life as being essentially an adaptation of man to his environment, not neglecting his power to transform his surroundings but finding the facts of major importance in his adaptations. This interpretation of history naturally places a notable emphasis upon many kindred subjects, geography and geology, the history of inventions of industrial importance, and the history of commerce.

The study of these matters of general principles can be made most precise and concrete if the historical method is followed, and, although this would lead to a very elaborate presentation if carried into much detail, it is possible to put the more important aspects of the subject before the average sophomore or junior. Within the compass of an undergraduate course it is not wise to attempt more than a general sketch of the development of these three modes of political thinking in England and Germany. So many of the general notions are a commonplace in modern thought that a brief sketch can be made to appeal to students, despite the genuine difficulty of the subject.

After the general discussion of policy the larger aspects of tariff history in the nineteenth century can be significantly treated. The development of the German customs union and the change to protection in 1879 are essential to an understanding of the great issues of the century. The passing of the protective policy in England is an important topic, and it is desirable to give some attention to the subject if there is time. Unless the course runs throughout the year it will scarcely be possible to find time for any adequate treatment of the changes in policy in England. These problems can be most significantly discussed with reference to their bearing upon the rivalry that developed between Germany and England toward the close of the last century. It is particularly wise to urge the class to find some explanation of the industrial regeneration of Germany; is it to be explained as a result of protection or German character, or is it a result of certain general industrial and commercial changes? In order to stimulate thought on this subject, some presentation of the larger aspects of industrial and commercial history must be included in the course.

Carrying out the idea of historical presentation of the problems, the subject of colonization is also most advisedly approached from the historical point of view. It is wise to concentrate attention upon the development of African colonization since 1885, but these events would have little meaning without some

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brief sketch of the larger features of colonial policy in the earlier periods. The modern problem is so definitely a tropical problem that the study can be confined to the conditions created by European contacts with countries whose climate is unsuitable for the permanent settlement of Europeans. Many deny the existence of sincere and legitimate motives for the acquisition of dominion over tropical countries; it is therefore a matter of some moment to show that the principles of modern liberal statesmanship are really free from the taint of selfish pursuit of commercial interests. The errors of judgment and the too frequent abuses that creep into a weak administration make it somewhat difficult to place the development of sound principles in proper relief. Particular emphasis has been laid upon the history of the Congo, because it illustrates both the futility of many suggestions made by antiexpansionists and the substantial progress that was being made toward the establishment of a better system of colonial administration in the Tropics. The relation of the Berlin act to the Congo makes the study an essential basis for the discussion of the international settlement in other parts of central and northern Africa.

It is possible to present the larger features of these problems in a single semester, but experience has shown that it is impossible to do full justice to the subject in that length of time. The students, however, are likely to regard the subject as relatively special, and it might well be difficult to enlist their interests in a full year course until an academic tradition has been established. If it is desired to emphasize matters of information that would be of importance to persons preparing definitely for administrative or commercial work in the foreign field, it would be absolutely essential that a full year, at the very least, be given to these problems. It would be possible to make two courses, dealing respectively with tariffs and colonies, and, if vocational interests were predominant, the additional time would be of great value. Here at Cornell, students are required to take elementary economics before registering in other courses in the department; and, as freshmen are not allowed to elect elementary economics, students in the arts college can not take other courses until their junior year. The special courses in the department thus become upper-class courses. I believe that juniors have been more numerous than seniors in my course on world politics. Special information is not required, so that it is wholly practical to give the course to a mixed class of juniors and seniors; if the course were made part of a fixed curriculum it might well be given in the earlier years as it would tend to stimulate interest and habits of reflection.

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THE HISTORY OF EUROPE SINCE 1850 AS A STUDY PREPARATORY FOR FOREIGN SERVICE.

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Recent years not only have brought about the active participation of the United States in the affairs of Europe, but also have stirred up in the mind of the average American a highly increased interest in European history. As one faces the problems of reconstructing the social order or tries to understand the causes of the World War, it is soon realized that the happenings of to-day can not be explained by the events merely of yesterday, and that the roots of the present lie deep in the past. One finds, moreover, that a deeper study is needed than that of the daily newspaper or the popular magazine before one can begin really to grasp the true explanations of present conditions. For those, therefore, who wish specially to prepare themselves for foreign service a knowledge of the history of Europe in the nineteenth and twentieth centuries must constitute an essential part of their intellectual equipment.

The problem of teaching or studying such a subject as this is chiefly a problem of the amount of time available. A survey of the subject may be attempted in a single college "course"; for advanced study and research a lifetime would be all too short. A single course, however, whether pursued in college or studied privately will serve to accomplish two ends; first, to outline the great topics that must be studied, and, secondly, to point the way to further study, through information as to books in the special subdivisions of the field. It is highly desirable that such a course on the period since 1850 should be preceded by a general course on the history of Europe before 1850, in order that an idea may be gained of the foundations of modern Europe. Otherwise much will have to be taken for granted.

We have spoken thus far of the value of the single outline course. But such a course, whether of a half-year or a whole year in length, will serve only as an introduction. With this the ambitious student will not rest content. He will see the necessity of greater thoroughness of preparation. Let us assume that after laying the foundations of a general education, and after mastering at least one foreign language, he will devote the last two years of college to a really adequate study of a more specialized character, and, if possible, will continue his work into some years of graduate study. For such a student there is open a choice of fields embarrassing in their richness and fascination. He will proceed to combine with theoretical treatment the historical approach to the great divisions of economic and social science.

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First may be noted the importance of the geography and geology of the countries of Europe. Upon this basis rest the development of agriculture and the production of raw materials. Does farm ownership or farm tenancy prevail? Is the food supply sufficient? What are the export crops?

Another factor is that of population. Only through an historical approach can the racial animosities that threaten the peace of Europe be understood. What is the significance of the birth rate? What are the causes of emigration? To what extent do religious difficulties interfere with the orderly pursuit of life?

Closely allied is the labor question. What is the standard of living, and is this changing? How is labor organized? What theories or philosophies govern the labor class? The rise and development of the different types of socialism constitute a field for investigation the importance of which is still little appreciated by many business men in America.

Similarly the development and organization of manufactures must be studied. To what extent has the modern industrial system really penetrated Russia? How have the Germans so successfully invaded other countries in the development of manufacturing industries? What are the sources of capital? What is the status of the organization of industry? What is the attitude of the Government toward combinations of capital? What are the relations of capital and labor and how controlled by the Government?

In direct relation to all the preceding must be the study of transportation. What are the routes of commerce and what determines these? To what extent are internal waterways used? What is the history of the railroads, are they owned, operated, or controlled by the Government? What countries of Europe are under-developed in respect to railroads? What lessons can America learn from Europe?

No less important, indeed inextricably involved with the foregoing, is the matter of finance. In each country the matter of revenues and expenditures, the public debt, the taxes, the currency and banking systems, the institutions of credit, both commercial and agricultural, will be the cause of much anxious thought to the next generation. The question of tariffs will come in for new consideration.

To a greater extent than ever before will the problems of social betterment be in the forefront, such as the control of poverty, crime, and disease, and the development of insurance against old age, illness, and unemployment, the responsibility of the Government in the matter of finding employment, and vocational education.

Further, the student must learn from the history of Europe how the great peoples have governed themselves. The oldest of constitutional States, Great Britain, has seen during the war a most radical extension of the suffrage; just before the war it saw both a radical change in the position of the House of Lords and the enactment of a code of social reform the purport of which is yet hardly understood.

Finally, there must be studied the international relations of Europe; the unstable edifice of the "balance of power" that fell to pieces in 1914; the evolution and maintenance of the German military state, the preparations for defense against it, and the conflict of the alliances. Closely allied therewith is the problem of colonial administration and the conflict of rival imperial systems. The piling up of armaments and the problem of naval supremacy, and the efforts to arrive at a means of adjusting international differences without recourse to war that found expression in the Hague conferences, and the failure of such efforts, demand the study both of history and of international law.

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Over and above the investigation of these content-subjects, the study of recent European history has to offer much that is valuable in the way of method. The penetrating student must master the use of statistics; he must examine the publishing activities of governments; he must know the location and the resources of great libraries and the publications of technical societies. He must look into the educational institutions and the educational methods of the states whose minds he would understand. Himself a trained man, he will discover the use of trained men in the service of the modern State.

Besides the great variety of subject matter that confronts one, one has to reckon also with the complexity that arises from the great number of the separate States of Europe. A selective process is necessary; one can follow a particular subject, such as the development of finance, throughout all Europe, or he can study many phases of the life of a single country. The important thing is to know something of the whole and to do thoroughly work in some restricted field. For such advanced study courses in history, government, international law, economics, and social science are offered by all the larger universities. Such advanced study will be most profitably pursued under the instruction of experts in the respective fields, who can advise also as to the proper correlation of elective courses to meet the needs of the particular student. The private student can do much, however, through intensive reading. For this he will need bibliographical aid. Such assistance will be obtained, at least by way of beginning, through reference to the carefully prepared lists of books which are included in each of the textbooks mentioned.

For the outline course on the period since 1850 several excellent textbooks are available, of which four may be mentioned as especially suitable.

Hazen, C. D. Europe since 1815. New York, Holt & Co., 1910. 830 p.
Hayes, C. J. H. A political and social history of modern Europe. Vol. 2. New York, Macmillan Co., 1916. 582 p.
Schapiro, J. S. Modern and contemporary European history. Boston, Houghton Mifflin Co., 1918.
Holt, L. H., *and* Chilton, A. W. The history of Europe from 1862 to 1914. New York, Macmillan Co., 1917.
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Of these the first and the last are stronger on the political side, while the second and third emphasize the economic and social factors. All of them, however, discuss the great topics that must be considered: The development of the separate nationalities of Europe, their rivalries and the "balance of power," national imperialism, the progress of industrialism and democracy. All except the first discuss the causes of the World War. For the special history of the war, in its various phases, there is a rapidly increasing mass of books, an excellent guide to which may be found in G. M. Dutcher's "A Selected Bibliography of Publications in English Relating to the World War"; in McKinley, A. E., "Collected Materials for the Study of the War," Philadelphia, McKinley Publishing Co., 1918, a compilation of high value to every student. Very full, but without any helpful critical comment, is "A Check List of the Literature and Other Material in the Library of Congress on the European War," Washington, Government Printing Office, 1918.

HISTORY OF THE LATIN-AMERICAN REPUBLICS.

By WILLIAM R. SHEPHERD,
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In many respects the rise and development of the nations of the New World which were formerly under the rule of Spain and Portugal are of great interest and value to the American student. They represent a type of civil[illegible] quite distinct from our own. They started upon their independent [illegible]stan-

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tially without experience in self-government. To acquire it, they had to pass through a process of experimentation in political theories and practices which is unique of its kind. As a laboratory for the study of race problems, no part of the world is richer than the region of Latin America. In the great majority of the Republics the population is a blend of white, Indian, and Negro. The traits and customs inherited from the three ancestors must be understood and appreciated by Americans, if their relations with Latin Americans are to be productive of mutual advantage. From an economic standpoint, the southern countries have been lands of exploitation, rather than areas of settlement and development. Rich in natural resources, they have attracted a considerable amount of capital, but not immigration to anything like the extent required. How the several factors of national progress have operated in an environment so different from that of the United States offers a wide field of profitable inquiry.

When arranging any program of study, not only must all these points of variance from our own conditions, past and present, be borne in mind, but two notions prevalent among our people must be guarded against. One is, that the Latin-American republics should be viewed in a patronizing fashion as localities of scant importance. The other is, that since both they and the United States are situated in the Western Hemisphere and have republican forms of government, American standards of judgment should be applied to them. The subject, nevertheless, should be approached from the standpoint of the history of our own country, not in order to stress evidences of similarity, but to emphasize characteristics of essential unlikeness, and hence to ascertain how the two types of civilization may be adjusted beneficially to each other.

Assuming that the student has been thoroughly grounded in the history of the United States, the episodes in that history which suggest a possible connection with the course of events in Latin America should be utilized as vantage grounds from which the survey of the latter can be undertaken. Thus, for example, the condition of the Thirteen Colonies at the time of the American Revolution, and the later relations of the United States with Spain through the cession of Louisiana, would afford opportunity for a consideration of the circumstances of the Spanish and Portuguese colonies during the same period, with the idea of showing to what extent such circumstances were responsible for the subsequent overthrow of the control exercised by the mother countries concerned. Then, the fact that the United States became involved in the struggle between France and the other European powers from 1803 to 1815 supplies an easy transition to an examination of the relationship of France to Spain and Portugal, in its bearing upon the earlier phases of the wars of emancipation in Hispanic America. The Monroe doctrine, similarly, furnishes a nucleus about which the story of the rise of the independent republics could be woven. Following these indications, the Mexican War, the Clayton-Bulwer treaty, the Ostend manifesto, the Civil War, the "Virginius" affair, the Santo Domingan episode, the attempt at American interference in the Chilean-Peruvian War, the establishment of the "Pan American Conference," and the increasingly numerous points of contact between the United States and the Republics of Latin America since 1889, could all be treated as centers of departure for excursions into the intervening history of the Republics themselves.

For the purpose of collegiate instruction in the subject, the colonial period need be examined no further than to ascertain the general situation, political, economic, social, moral, and intellectual, in the Spanish and Portuguese dominions at the outbreak of the wars of emancipation. After a few introductory sessions devoted to this theme, the story of the national development of

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the Latin-American Republics from about 1806 onward could be presented to advantage during a single semester of three periods a week, preferably in the first term of the junior year. If desired, it would be easy to expand the work so as to make it cover both terms. Given the existing state of the curriculum in most colleges, however, it would appear more serviceable to devote the second term to a study of contemporary Latin America.

In the excellent "Syllabus of Latin-American History," by Prof. William Whatley Pierson (University of North Carolina, Chapel Hill, 1917), there are several books cited, any one of which might be used as a convenient manual for the course. It would be advisable, nevertheless, for the teacher to prepare an outline of those phases of the history of the United States, already indicated, which could be employed as actual points of departure. The syllabus in question would supply the topics needed for Latin America. In addition to these, it furnishes a working list of the more available books and articles for reading and reference, covering both history and present conditions.

Since 19—or if Haiti be included, 20—countries are involved in any general survey of Latin America, and since among them 18 have a Spanish origin, it might be desirable, after dealing with the period of the wars of emancipation, to take up in more or less detail the history of certain typical countries in the Spanish group, rather than attempt to handle them all. The list chosen should comprise the republics in and west of the Caribbean Sea, with which the United States from time to time has come into closest contact, and a number of the South American nations as well. In the former, Cuba, Mexico, and the Central American republics viewed practically as a group; in the latter, Argentina, Chile, either Venezuela or Colombia, and either Peru or Bolivia, could be selected to represent the Spanish-American countries. The history of Brazil, of course, must be studied, not only because of its intrinsic importance, but because it deals with the Portuguese element in the evolution of Hispanic America.

THE STUDY OF THE HISTORY OF THE NEAR EAST AND NORTHERN AFRICA.

By ARTHUR I. ANDREWS,

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The Near East comprises Turkey, including Constantinople, Asia Minor, Mesopotamia, and Armenia; the Balkan States, including Greece; the Caucasus, Persia, Egypt, and northern Africa. Russia must also have some consideration. This is the Mohammedan East, past and present; a Mohammedan world, sometimes united but more often as divided against itself as is the Christian world. For centuries now Mohammedanism has been the one most constant factor and element of this Near East. Every factor, however, must be taken into account, political, economic, social, historical, racial, religious, in the case of every nationality. The student preparing for foreign trade must systematize his study in every way possible and assign an amount of time to each commensurate with its relative importance.

The first of these factors is the purely historical. Nowhere in the world does the historical background count for more than in the Near East. The prestige of history is what sustained the Turk in power. The episodes of Serbian, Bulgarian, Roumanian, Georgian, and Armenian history which these nationalities cherish, they cherish with a tenacity that we must appreciate, if we are to understand them and their interests. Possibly most important of all are the Greek traditions which have shaped the policies of Greek rulers, kings, or ministers. It

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is not too much to say that the Greek and the Armenian, the Serb, the Bulgar, and the Georgian, and finally, most emphatically, the Turk owed their social, industrial, and economic status very largely to the current of history that swept them together the way it did.

The geographical factor can easily be underestimated in considering the history of as well as the conditions of the Near East. The student must know the arrangement of mountain and river valleys in the Balkan Peninsula, the distribution of seas, Red, Mediterranean, Aegean, Black, and Caspian; of gulfs like the Persian and of straits like the Dardanelles and Bosporus; of the river valleys of Mesopotamia and Egypt and of the Caucasus Mountains, the Armenian Plateau, the mountain ridges of Asia Minor, the Balkans and the Carpathians; all these physical features have influenced and will influence economic, social, and political conditions.

Third, the economic resources of the Near East are vastly greater than is generally understood. The variety of products, as well as the quantity of production, have made it the seat of empires and long ago fastened upon it the eyes of imperial dreamers in Berlin as well as in Petrograd and elsewhere. The story of Turkish dominion in western Asia reveals the reason for the backwardness of the development of these resources, mineral and agricultural.

Most complicated of all the factors is the racial. From the Balkans to the Caucasus, from the Black to the Red Sea, the mixture of races is like unto that in no other part of the globe. The Caucasus region has its peculiar problems. shared only partially with the eastern Asian tablelands or the Mesopotamian region. Second only to the Caucasus, the Balkan peninsula presents differences of race the most complicated and here, of course, such differences are the more important from the fact that the Balkans are at the front door of Europe, not in a corner distant from civilization but vitally affecting the whole of Europe, while similar conditions in the Caucasus or in eastern Asia Minor might go on, as history has demonstrated, from bad to worse without seriously interfering with European affairs.

The religious factor is by no means the least important. The Christian element is found in every quarter and so is the Mohammedan. Even in Mesopotamia, along the upper reaches of the rivers, are the Nestorians; and, on the other hand, the Mohammedan element in the Balkans and in the Caucasus needs consideration. It will not do, moreover, to stop with any superficial distinctions. It may make a very great difference politically whether the tribe or nation which you call Mohammedan is Sunni or Shiah, or whether a people are Greek Christians, Armenian, or Georgian, especially in Asia Minor.

A possible division (the figures appended suggest relative weight) of such a course based upon 90 lecture periods might conceivably be as indicated below:

(4) Ancient empires and civilizations (before Alexander the Great).
(3) Greek influence in the Near East.
(2) Roman influence in the Near East.
(3) The Byzantine Empire.
(6) Islam and the Arab conquests.
(20) The Turkish Empires.
(18) The Balkan peoples.
(2) Egypt in modern times.
(7) Austria-Hungary and the Near East.
(13) Russia and the Near East.
(5) Northern Africa.
(9) The Near East as a focus of international relations.

Something should be said to bring out the salient facts concerning the great empires of antiquity whose seat was the Mesopotamian and Egyptian river valleys, a word about the Greek penetration under Alexander and his successors,

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and another concerning the influence of Rome. A brief study of the Byzantine civilization should be followed by a sufficiently clear exposition of Mohammedanism and its influence upon the peoples accepting it. There should be a more intensive investigation of Turkish institutions, the development of the Ottoman Empire and a most thorough study of the origins of the Armenians and Georgians, the Balkan peoples and the Balkan States. The connection of the European powers with the peoples of the Near East, involving some excursions into European diplomacy, should be patiently unfolded. Up to about 1700, Constantinople was the center of power; since then it has been the center of intrigue. Up to then, from the Bosporus had gone out the word of law eastward and westward, northward and southward. Since then, the radiating lines point *toward* the Bosporus from London, Paris, Vienna, Berlin, and Petrograd. These interests, economic as well as political, of each European State, including those of the Balkans, in any quarter of the Near East need to be set forth and amply explained to the full comprehension of all students.

Under these topics should be considered the economic as well as the political conditions, the trade routes of Christian and Mohammedan, the resources, agricultural, mineral, etc., of various sections during each important period. Probably the geographical factor would be taken up first, but it must also be referred to repeatedly as the trade conditions and productivity of each section need to be noted. The diplomatic factor grows in strength as the course works down into the nineteenth and twentieth centuries. No course of this kind could be complete if it did not bring out the economic and political reasons why the Near East has been the hotbed of so many European wars.

The history of the Near East and Africa can be covered properly in a minimum of one year (two semesters) of three hours a week of lectures, supplemented by outside reading. The presentation of the subject should be a proper compromise between the chronological and the topical, with increasing emphasis upon the later periods. Preferably it should come in the junior or senior year of college work, since the new environment, new names, new races, new conditions are apt to appall the less mature student. Such a course might in some colleges be combined with one in Russian history and institutions, but this is to cramp both subjects. Russian history should be studied intensively, of course, by any students of the Near East. Then, again, it should be preceded by one course at least in general European history, and, if possible, by a course in European governments. Such a strong European background is absolutely essential. Courses in transportation, commerce, government, modern languages, and the like might profitably be pursued simultaneously with one on the history of the Near East, to mutual advantage.

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THE FAR EAST AND AUSTRALASIA.

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The traveler or sojourner in a foreign land will profit from his visit in proportion to his preparation to make the most of his opportunity. The man who knows nothing about the people with whom he comes in contact, their history, the rise and development of their institutions, will move among them as it were with a film over his eyes. And in no part of the world is it more important for the American business man or Government official to be familiar with the life of the people than in the Far East. Because we possess a European civilization we find much that is easily intelligible as we travel in Europe, in South America, or in Africa, where all the lands are under European control. Moreover, in high school and college the history of European States is offered to the students. But in Eastern Asia, as well as in Turkey and Egypt, the American comes in contact with ancient civilizations which present few points of contact with his own, except in so far as they have been modified in the recent years of European intercourse. In India and Indo-China, the East Indies, China and Japan, the American can not interpret native life in terms of his western experience. He must know something of the history of the people and their civilization. This can be obtained best through study. Rarely does a man on the ground have time for thoughtful reading, although he acquires a mass of detailed information through experience. It should be the duty of the American college to offer instruction which may help such students as enter the foreign trade or the Government service to understand the new environment in which they must serve.

Australasia presents a far simpler problem. There, in Australia and New Zealand, the American finds a purely British people engaged in mastering a continent, as the people of the United States and Canada have done and are doing. The civilization is British, modified by certain local natural conditions. The history of the people is economic and social rather than military and political. The American who knows English history and is familiar with modern social and industrial progress can easily follow the development of the British people of Australasia.

A college course in these fields, designed to meet the needs of Americans who are to serve abroad, may be worked out in several ways. A program, which has been in use for 14 years, is much as follows. The countries of Asia, from the Indus River to Bering Straits, are treated in one course, and Australasia in another and much briefer one. In the former course, a brief historical back-

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ground, with reference to the development of the political, economic, social, and religious ideas of the people, is presented. Then, in connection with the European possessions in the Far East—India, Indo-China, Netherlands India, Siberia—a careful study is made of the way in which the conquest or occupation was effected. This calls for a special study of the rise of the British Empire in India. In dealing with the independent states of China, Japan, and Siam, the emphasis is placed upon the events since the establishment of treaty relations and open commerce with those nations, in the middle of the nineteenth century. As the discussion advances into the more modern period, the consideration becomes more detailed. Special emphasis is laid upon the development of foreign rights under successive treaties, and upon the growth of foreign trade. The course will need a certain amount of readjustment every year in order to allow for a consideration of the most recent events, such as, for example, the Sino-Japanese negotiations, the Far East in the World War, the Lansing-Ishii notes, and the Washington conference.

Such a course should be offered primarily for upper classmen. The student will profit most from it who has taken courses in European and American history and can correlate events in east and west. A study of unfamiliar peoples, customs, and institutions, calls for a certain maturity of judgment which a freshman rarely enjoys. As a preparation for foreign service, it should be taken as near the close of the college course and the beginning of overseas employment as possible.

A course, as outlined, should be allowed at least three hours a week for two semesters, or five hours a week for two quarters. If it is desirable to confine the consideration to eastern Asia alone, omitting India, Malaya, and the East Indies; then one semester or one quarter would suffice. But if thought is given to the vastness of the area to be covered, the many States and peoples, the two great civilizations with which the average student has had no contact whatever, and the potential importance of eastern Asia in the future, then as much time will be given to this subject as to any of the major courses in history offered by the institution.

In the case of Australasia, a two-hour course for a semester, or three hours for a quarter, would suffice. This would give time for a study of the history of the two regions, and for a study of the political, economic, and social life of the people to-day.

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POLITICAL HISTORY OF THE UNITED STATES.

By FREDERIC L. PAXSON,
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For practical use in the field of foreign trade and business the background of American history must include two main groups of facts, (1) the underlying historical ideals that form the basis of political discussion, and (2) the application, during the last half century, of these ideals to the changing world in which we find ourselves. It is not possible to understand the present without constant recurrence to the ideas and events of the last three centuries; and it is equally impracticable to use to immediate advantage the history of the United States prior to 1877 unless the connecting links between that year and the present are clearly seen.

The history of the colonial period and the constitutional period to the close of the Civil War presents a picture without a parallel of a people reduced to the simplest terms, pushing their organized life across a continent, and striving in their agencies of government to meet the problems raised by their daily existence. The big problems that were met and solved were those of—

(1) A practicable freedom; for farmers working alone, or in small groups, were free in fact, and there was neither existing power to bring them into subordination nor desire on their part to surrender liberties.

(2) A basis for representation, in solving which they had no option but to dwell upon the equal rights of similar areas or groups in determining their common destiny; and which forced them to drift away from any workable basis that the British Empire could understand.

(3) A compromise between local freedom and central control, which was reached when the 13 colonies formed themselves into a Federal Republic of enumerated powers.

Democracy, representation, and federation, as thus enumerated, contribute all the basic ideas to the history of the United States. On top of these, the colonial period takes its true proportions, giving the opportunity for democracy to take shape in the wilderness and ripen into self-consciousness.

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The American Revolution in its relation to representation has always been regarded as a consequence of the different experiences of the British peoples astride the Atlantic. We are now coming to see in it more and more of the reaction of frontier democrats against a society whose doors were nearly closed and whose social layers had become stiff and impermeable. The democratic revolutions that elected Jefferson in 1800 and Jackson in 1828 were only repetitions of the original concussion that rent the British Empire.

The growth of a National Government in America between its inauguration in 1789 and its survival in the Civil War provides the details for the study of federalism. In a simple people the place of any Federal Government was necessarily that of judge and soldier and tax collector. The really important personal matters were local in character; and just as our colonists detested taxation without representation, their border-state grandchildren disliked to be subordinated to absentee control. The States' rights principle came to them at this point, and for 80 years we see a gradual evolution, as society became more and ever more complex and as relationships became too broad to be controlled by any State.

Before the death of John Marshall the law had been provided for as broad an extension of national powers as necessity might dictate. Slavery and territorial control, and land and railways then proceeded to dictate that necessity, until at last the balance was swung, in the sixties, from a Federal Government prevailingly local in emphasis to a National Government encroaching of necessity upon local powers.

In the groups of facts related to these processes we find the whole vocabulary of political debate in America. No American trader, at home or abroad, can call himself informed unless he understands these facts in their correct settings and relationships. Nor can he use his information to best advantage unless he sees, in much greater detail, the steps by which the new Nation has broadened its ramifications since the Civil War, though ever preserving its organic connection with the fundamentals of democracy, representation, and federalism. The whole world to-day can have from this phase of our history more that is full of promise for international reconstruction than it can from all the rest of history.

In the 40 years just past an industrial society has replaced an agricultural, bringing with the change alterations in kind and quality that are not yet appreciated. Freedom has ceased to be a matter of little law, or none, as Jefferson wanted it, and has become a matter of much law and wise law. In a crowded world the right to be free is matched by the rights of others to be let alone. The police power has arisen to abridge rights that ran unquestioned in the open farms. Our States have been made over in the process of meeting these needs, while the National Government has unfolded power after power.

Political history must deal with new varieties of facts because of these changes in the nature of government and can not be prevented from taking on an economic and social aspect. The tariff, the currency, banking, railroad and corporation control, and social legislation have all crowded into the halls of internal politics, while the subject-matter of international relations has become each year more completely a problem of trade relationships.

The American abroad needs to know the relation of his country to all those currents. He needs to see how a tariff in the United States, perhaps, may curtail an export business in a neighbor country and by reducing its people to indigence cut off their buying power so greatly as to stop their imports from a second neighbor, whereby, through the double cessation of trade, a third power

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may find its ships lying empty and unneeded at its docks and its shipyards no longer able to buy the steel and iron of the American miners. The world has become complex—so complex that only an historical interpretation, reinforced by all that economics and sociology and political science can add, can hope to clear its tangles. But now, as never before, there is the hope that in the next generation the world will meet its problems with science and sincerity, and may find in our history some clue to the interactions of jealous autonomy and common interest, of private freedom and public efficiency, that may make it easier to promote the next great step toward international cooperation.

For general reference purposes in American political history there is no better guide than A. B. Hart's The American Nation, A History. In the 28 volumes of this cooperative work may be found not only the essential facts of history, but useful classified bibliographies on all important topics. For class use the four small volumes in the Riverside History of the United States, by Profs. Becker, Johnson, Dodd, and Paxson, cover and interpret the whole period. Useful textbooks for the period since the Revolution are C. R. Fish's National Development, and F. L. Paxon's Recent American History. With these works as a base it is possible to conduct the course in American history at any place in the college course, but with particular advantage later than the freshman year. In many universities general American history is a basic course for sophomores. If two years can be given to the subject, the second course may well be restricted to recent American history and come in the senior year. For the best advantage at any point the course or courses must be thoroughly coordinated with the basic courses in political economy and government.

COMPARATIVE POLITICAL INSTITUTIONS AND POLITICAL HISTORY OF FOREIGN COUNTRIES.

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That persons preparing for employment in foreign trade should be familiar with the political systems of the principal nations and with modern political history is eminently desirable; for admission to the foreign service of the Government such training is indispensable. Obviously there are here two subjects: (1) Comparative government and (2) political history. Under the severest limitations that can be adopted, both are, in subject matter, very extensive; and, although interrelated, they may be taught to best advantage separately.

Instruction in comparative government should be based upon, or be so planned as to convey, a thorough understanding of the political institutions of the United States. State and local government call for relatively little attention. But the Federal Government must be known in detail—the nature and limitations of its powers, the processes and effects of legislation, the operation of the courts, and especially the organization and workings of the administrative system. The treatment of the subject in the usual courses in civics in the secondary schools will not suffice. On the legal and administrative sides particularly, the candidate must carry his study considerably further.

Grounded in American Government, the student must be made familiar with the political institutions of other nations. What foreign Governments will be studied must depend somewhat on the amount of time available. The English Government must, of course, be included. The French and German systems are hardly less important. The political scientist pays much attention to the Swiss

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system, but for purposes of foreign trade and foreign service the native land of the initiative and the referendum may be largely ignored. The Italian, Dutch, and Scandinavian Governments can be surveyed very briefly. And a small amount of time should be reserved for Japan and Latin America.

The study of these Governments should be primarily descriptive, but with a good deal of comparison. The first requisite is that each political system shall be understood as an entity—its origins and growth (briefly), the structure of the executive, legislative, and judicial machinery, the divisions and limitations of powers, current problems of reform or reorganization, the character and influence of political parties. Wherever comparisons can accurately be drawn, they are likely to prove illuminating. The composition of legislative bodies, the working of cabinet systems, the control of the central authorities over local government, the suffrage, committee systems—these and many other things can advantageously be viewed on comparative lines.

The field of political history is so enormous that it becomes a matter of considerable difficulty to mark off the portions that are most essential to students of the type under consideration. A working knowledge of the general history of the United States must be assumed. Beyond this, the principal need is familiarity with the political history of modern Europe. If the student can be given systematic instruction in European history from the period of the rise of the modern nations, so much the better. But at any rate his studies must cover European national and international developments since the era of Napoleon, and, with special fullness, since the Franco-German War. He should be familiar with the main currents of domestic history of at least a half-dozen of the leading nations, and with the larger phases of diplomatic and military history. He can not be too well informed on the national policies, the party programs, the great pieces of legislation, the industrial and commercial methods and achievements, of the decade preceding the World War; and it does not require argument that he should know the history of the war, and of its reactions upon national conditions and policies, in all of their more striking phases. Outside of the European field, the political history most worth giving time to is that of the Far East (especially China and Japan) and that of Latin America, chiefly the "A. B. C. Powers."

The most desirable allotment of time for the two subjects of comparative government and political history is a year to each, that is, a year course, with not fewer than three class exercises a week. Next to this would be a year for political history and a half-year for government. After this, a half-year for each subject. Finally, it is possible to handle the two subjects together, in a year course or, in what must be a painfully inadequate fashion, in a half-year course. A combination course would, presumably, be in the main political history, with parenthetic surveys of the important governmental systems. Whatever the time given these subjects, the courses should be taken only after the student has attained a fair degree of maturity, normally by persons in the junior and senior years of our college and universities.

No single method of presentation is under all circumstances to be preferred. A judicious combination of lectures and class discussion (with frequent written exercises) is likely, in most cases, to give best results. Whatever the method in the classroom, much stress must be placed on the student's reading and study. Approximately half of this reading should take the form of definite requirements made of all students in the course; the remainder should be selected by the student, in accordance with his interests and tastes, from books and other materials recommended by the instructor. There is much advantage in requiring each student to make an intensive study of a comparatively small but important topic, with a view to a written report or thesis.

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DIPLOMATIC HISTORY OF THE UNITED STATES.

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The importance of the study of the diplomatic history of the United States, in training for a career in foreign commerce is obvious, for what is our

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diplomacy but the dealing of Americans with foreigners? Exactly the same problems of differing national characteristics and points of view have confronted our diplomats, as daily confront our merchants. The same principles, the same methods, mean success for the one, as for the other.

Nor is it probable that the subject need be handled in any special way for students intending to go into foreign trade. The fundamental principles of bargaining by men responsible to others are always the same. The nearer one gets to what is fundamental in agency, and the handling of unfamiliar sensibilities, and the harmonizing of conflicting interests, the nearer one gets to what is valuable to any man engaged on the mercantile side of business, foreign or domestic, and the nearer one gets to what is fundamental in diplomatic history.

One distinctive advantage of diplomatic history over other fields for teaching purposes is that the actual human handling of cases can be studied with greater minuteness. We can see men actually about the council table, can follow the argument as it goes backward and forward, and often know what the contestants thought about when they went home that night. This is an opportunity which one can not afford to miss, and the purpose of the teacher should not be a smooth, proportioned survey of the whole. Of course there are facts that all should know, and general tendencies are of the essence of the thing taught. In spots, however, there should be enough time and emphasis to bring out every detail of the picture, while connections and setting may be impressionistically sketched in, provided that one remembers that impressionism is art and not chaos.

The effort should be made to so select the leading episodes as to show Americans in negotiation with a variety of nationalities. Individuality must not be neglected, for its importance and the importance of a man's knowing himself, and adopting the method suited to his personality, can not be overemphasized. Yet characteristics that are prevailingly American, or Spanish, or Japanese, can be made strikingly apparent, and are permanently a factor.

Naturally, diplomatic encounters should be so handled as to bring out as far as possible the permanent relationships between the United States and the several nations of the world, for in most cases the causes of diplomacy are the causes of business. Of course this is not always the case, for much business flows without producing any international commotion. Consequently, careful attention should be given to the structure of ordinary diplomatic relationships, the working and changes of our State Department and diplomatic and consular services, through which this stream of noncontentious intercourse is kept smooth. On the other hand, many sensational diplomatic episodes that filled the press for a time may be scantily mentioned or altogether neglected, if they proceed from purely accidental cause. Yet enough such cases should be handled to show that accident, or apparent accident, has significance.

A course in diplomatic history should not be a course in international law, but it involves a familiarity with it, and an understanding of its fundamental principles, in much the same way as does the life of a merchant dealing with foreign countries.

Personally I began by giving an all-year course of two hours a week. This ran over the whole field of our diplomacy. In the revolutionary period emphasis was centered on diplomatic method; in the period of the Napoleonic and Civil Wars, on international law. The clash of unconscious national tendencies was brought out in connection with the expansion of American territory, particularly between 1830 and 1860. The Monroe doctrine and its corollaries make a logical story about which to unfold the course of American policy, and our modern Caribbean and Far Eastern policies form a transition from the old to the ne

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detached and isolated subject, has helped to accentuate our feeling of political isolation and has made us to a greater or less degree blind to the duties imposed upon us by membership in the community of civilized nations. But a change in viewpoint and method in the general courses in American history, while highly desirable, is not alone sufficient. Diplomatic history, in order to receive scientific treatment, must be taught in a separate course. It must not be presented, after the manner of certain even recent textbooks, as a collection of interesting incidents. It is a subject which is capable of being treated systematically, and it can be taught to advantage only in close connection with the subject of international law.

There is a difference of opinion as to whether international law or diplomacy should come first in the college curriculum. International law furnishes the principles, and diplomacy the incidents and cases. Diplomatic history should, therefore, if the inductive method is to be followed, either come first or be accompanied by a course in international law. The course in diplomacy should be preceded by a course in American history. In most college courses American history comes as an elective in the third or fourth year. If courses in diplomatic history and international law are to be introduced, American history should fall in the third year, and diplomacy and international law in the fourth. In the fourth year two arrangements are possible; parallel courses in diplomacy and international law running throughout the year, or, if time can not be found for two courses, then a course in diplomacy during the first half-year and a course in international law during the second half-year.

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CONTEMPORARY INTERNATIONAL RELATIONS.

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The study of international relations deserves much more attention in our universities, colleges, and even in the public schools than it has hitherto received. Prior to the outbreak of the World War, instruction along these lines was so scant as to be scarcely worth mentioning. Hence our profound ignorance of the causes of the struggle and of the issues involved. In the public schools problems of foreign policy like the Monroe doctrine may have received some consideration in the course on American history, but they were dealt with in strictly historical fashion, and it is to be feared that there was little discussion of present-day problems or tendencies. It is possible that questions of international interest were occasionally discussed in connection with current events, but necessarily in a fragmented and superficial manner.

In our colleges, and even in our universities, conditions were not much better. Frequently a course in international law was given, but, speaking relatively, in only a few of our universities have advanced or more complete courses in this important subject been offered. Courses in American diplomatic history have usually formed a part of the university curriculum, but little attention has been paid to European diplomatic history or to our relations with the Far East. Consequently, the ignorance of even the educated American public has been much greater on international than on domestic questions.

Since the outbreak of the World War there has been some slight improvement in respect to the study of international relations. At least courses on the "causes of the war" have come into vogue, and instructors in European history seem to be more alive than formerly to the importance of the period since 1870.

Nevertheless, there appears even yet to be a very inadequate understanding of the importance and scope of international relations. It does not seem to be clearly realized that international law forms a relatively small field in the far vaster area of international relations, where motives of policy and national interest are apt to prevail rather than standards based upon legal or ethical conceptions.

The writer is also convinced that our so-called knowledge of international relations usually rests upon too narrow a basis, or is derived too exclusively from official or diplomatic sources. Official documents are excellent material in their way, if properly interpreted. They are, indeed, indispensable, though not always trustworthy. But they only furnish keys to a few of the doors which we wish to open.

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A knowledge of international relations should be based upon a study of realities, a proper sense of which is often strangely lacking in diplomatists. The great modern journalists are often much safer guides.

Ideally speaking, the student of international relations should have both a comprehensive and intimate knowledge of all nations and peoples, including, of course, his own. His first need, perhaps, would be an insight into the national psychology of the peoples or nations he is studying. Then he should have a knowledge of their intellectual as well as material resources, their trade relations, their history, industrial and political systems, etc.

But since "art is long and time is fleeting," the student must perforce content himself with a more modest program. He will perhaps do well, at first at least, to confine himself largely to a study of national policies like those of the Monroe doctrine or the "Open door," to international problems like those of sea power or the freedom of the seas, and to the causes of war, with a view to discovering remedies or preventives. The most essential knowledge of all relates to national interests and policies and to our relations with our real friends and neighbors.

Too much stress should not be laid upon mere geographical contiguity or continental isolation. Thus, our relations with the A. B. C. powers (Argentina, Brazil, and Chile) are important, but not as important as are our relations with Canada, the countries of western Europe, or with the peoples bordering on the American Mediterranean, i. e., the Gulf of Mexico and the Caribbean Sea.

As an illustration of the courses which might be offered, attention may perhaps be called to the work in contemporary international relations offered at Indiana University during the past few years.

Since the outbreak of the World War an imperfect attempt has been made to fill in to some extent this great gap in our curriculum. In addition to the former course in international law, there have been offered courses on "The causes of the war," "European international relations," "Problems of the Far East," "Problems of American foreign policy," "Our relations with Latin America," and "America and the war."

As to scope and method of treatment, it may be said that two or three hours during a semester have usually been given to each subject. Naturally, there is an almost complete lack of textbooks. The lecture method of instruction, if used exclusively, is neither practicable nor desirable. Consequently, if the classes are not too large, the seminary method of study and instruction seems best adapted to the situation. The student is given assigned readings and reports, and these assignments are made the basis of discussion in the classroom. To insure logical arrangement, outlines of the reports should always be written on the blackboard. At the end of the semester a thesis (with outline, bibliography, and marginal footnotes) on some particular topic may be required. An intensive as well as extensive knowledge of the subject is thus obtained. The members of the class as a whole should be required to purchase at least one book, and, if possible, several books, which should serve as a basis for general study and discussion.

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THE STUDY OF AMERICAN DIPLOMACY, TREATIES, AND FOREIGN POLICY.

By A. B. Hart.

Professor of Government, Harvard University.

Two types of learners come to drink at the Castilian fount of diplomatic procedure and history—the man who studies by himself, and the man who has the opportunity of systematic advanced instruction. The approach to the desired goal necessarily differs in the two cases. The college man is piloted from the beginning to the end of his voyage; the self-worker can accomplish nothing unless he has the propelling power necessary to drive him through written materials and discussions, and the habit of putting his results together in a consecutive and logical form. He must somehow get into his mind, for himself, an analysis of the subject with which he is dealing.

This is a hard task without some sort of preliminary guidance. The best way to begin is on a systematic book, not too technical, dealing with international law, such as A. S. Hershey, Essentials of International Law; or Wilson and Tucker, International Law; or T. J. Lawrence, Principles of International Law; or W. E. Hall, International Law. It is a good practice to go through such a book, pencil in hand, underlining significant words and phrases and setting down comments and queries in the margin.

The American student is bound to take special account of the principles adopted and applied by the State Department and by American jurists. He needs, therefore, to be acquainted with the leading cases, particularly those of the Federal Supreme Court. Convenient material is now provided in the handy collections of select cases particularly Cobbett, Cases and Opinions on International Law; J. B. Scott, Cases; L. B. Evans, Cases. Many important topics may be found in the Cyclopedia of American Government (use the cross references).

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One of the main materials for international law is treaties; and the standard edition of United States treaties edited by W. N. Malloy, in two volumes, and the additional volume edited by G. Charles, are easily available.

For the Diplomatic Service a knowledge of American diplomatic history is of course indispensable. The student who is working by himself should therefore read with care and attention diplomatic stories of America, of which C. R. Fish, American Diplomacy, is the best for the purpose, inasmuch as it is written with broad knowledge and appreciation of the student's needs and difficulties. This may be supplemented by reading the diplomatic chapters in The American Nation, a history which in the twenty-seventh volume of text brings the narrative down to 1917. Nearly every volume contains chapters on diplomatic history, which taken together make a consecutive narrative. An absolutely indispensable parallel volume is J. W. Foster, Practice of Diplomacy, which is based on the author's long experience as a diplomat.

More detailed studies of particular questions in international law and of specific episodes in American diplomatic history can readily be found through the brief articles in the Cyclopedia of American Government and their references; and through Canning, Hart, and Turner, Guide to the Study and Reading of American History, with elaborate bibliography of the earlier and especially recent diplomatic problems. A. B. Hart's Foundations of Foreign Policy includes a list of authorities in American diplomacy down to 1901. In A. B. Hart, American History, Diplomacy, and Government, will be found at sections 64–95 a set of 90 topics, with brief outlines and specific references; also at sections 166–196, a set of 30 special topics with more elaborate references.

The young man who has the opportunity of college and university courses in international law and diplomacy has the broader opportunity of fitting his work in with other fields, in a sequence of formal courses. The first necessity—this applies also to the self-preparing young man—is good grounding in English composition, including the declining art of spelling. The ordinary processes of arithmetic are useful to any public official, and a thorough knowledge of geography, physical and political, is essential. Somewhere in the course should come a study of French, Spanish, and German sufficient to enable the student to read books and newspapers in those languages with ease; and also to possess a speaking knowledge of at least one. It is of prime importance that the future consul and diplomat should be able to understand what the other fellows are doing.

Of course, the future diplomat will make himself familiar with the history of Europe and of the United States, so as to know what has been going on in the big world of which diplomats take notice; and so as to trace the development of international law and the difficult present questions of territory, trade, colonization, and national influence. Excellent instruction for reader and student are C. D. Hazen, French Revolution, and Europe since 1815, or Carlton Hayes, Political and Social History of Modern Europe; J. S. Bassett, United States, adds special courses on Russia, Latin America, and the Orient, fields in which future diplomacy is likely to be particularly vivid.

A formal course in international law should come in the second or third year of a college course, on top of and alongside the narrative historical courses. A good parallel is a course in American constitutional law or in comparative government. Later in the college course the student must take advanced and special courses in international law and diplomatic history. He should not fail to study the history of trade and commerce. At least one systematic course in economics should be taken.

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In these courses, especially those on international law and diplomacy, the student should do abundant written work. Nothing is more useful to a public man than facility in getting up and clearly presenting information on a specific subject. It is very desirable to write at least one elaborate thesis on some one topic in American diplomacy requiring the application of principles of international law.

All this class work should be supplemented by good private reading in history, government, and diplomacy. Read lives of practiced diplomats, such as William E. Seward and John Hay, and reminiscences of men like John W. Foster and Andrew D. White, to reveal the inner workings of the State Department and the embassies.

The self-teacher and the university man alike must form the habit of bringing themselves to book, by making brief abstracts of the volumes that they handle, by framing outlines of important subjects with which they deal; by submitting six such examinations and tests as are possible; by trying to bring together into one group their remembrances and thoughts, so that whatever they may read, study, or think about will bear upon their main subject of study.

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Standard English collection.

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COLONIZATION AND COLONIAL POLICIES.

By G. F. ANDREWS.

Preparation for colonial service is not merely a matter of training young men for official positions in the foreign possessions of the United States, and for service in developing the commercial interests of these possessions; there is also urgent need of men in consular posts and in commercial enterprises, who by their previous training are qualified to advance the commercial interests of the United States in the possessions of other powers. New outlets for the products of our factories must be found, and new sources of raw material developed, if we are to hold and increase our share of prosperity.

Some light on the subject of what special preparation is needed may be found in the experience of the great commercial and colonial powers. Great Britain, France, and Holland have been principally concerned with training men for service in their own possessions. Germany, with foreign possessions offering a field of activity for only a limited number of Europeans, has been concerned with the problem of securing the trade of the possessions of other powers, and in this she has been notably successful. This has been due, in no small measure, as English authorities frankly admit, to the superior, special, practical training given in the colonial schools of Germany. On this subject Evans Lewin said, in 1914: "Conditions are changing. New nations employing new methods have entered upon a fierce competition in colonial development. * * *

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The natural products of the sea and the land are being studied and exploited not only on the spot, but are also being investigated in the laboratories and schools of Europe. The economic prize is more and more likely to fall to those who have fitted themselves by a preliminary training before undertaking the rougher work of actual exploitation."

England has believed in a high degree of general education, designed solely for mental training, followed by some study of colonial subjects (languages spoken by natives of her possessions, colonial law, history, etc.), supplemented by lectures on colonial administration, hygiene, medicine, etc., academic rather than practical in character, and this followed by practical training during a period of apprenticeship in the colonies.

It is generally admitted that these methods no longer suffice and that preparation in France and Germany is now superior to that given in England. A new colonial college[1] is proposed for practical training. The following headings show the subjects which it is thought should be taught:

A. Theoretical course:
   1. British colonial history—History of foreign colonies.
   2. Colonial law—(*a*) Commercial law—(*b*) Native law and customs—(*c*) Administration of the Empire.
   3. Ethnology—(*a*) Comparative religions—(*b*) Languages.
   4. Geography of the Empire—Climate.
   5. Sociological and political conditions in the dominions and colonies.
   6. Theory of the Empire (comparison with other empires).

B. Practical course:
   1. Tropical hygiene.
   2. Agriculture—forestry—commercial botany.
   3. Commerce and industry of the Empire.
   4. Conservation of resources.

Preparation in Holland offers no important suggestions for this brief statement.

France has three notable colonial schools (supplemented by important lectures given at the Sorbonne and under the auspices of the colonial societies).

A. École Colonial (Paris). (Two-year course open to French and natives of the colonies and dependencies.)
   Subjects—Practical administration—colonial law and languages—history and geography—ethnology—hygiene—colonization, etc.

B. École Pratique Coloniale (practical commercial education).
   Courses in hygiene, history, geography, administration, etc.

C. Institut Colonial de Marseille (two-year course).
   1. Study of vegetable, animal, and mineral products.
   2. Commerce and colonization.
   3. Hygiene, climate, agriculture, etc.

Germany also has three important schools:

A. Hamburgische Kolonial Institut (special training for business and commerce, as well as for colonial officials).

B. Deutsche Kolonial Schule (practical colonial training).

C. Seminar für Orientalische Sprachen (purely theoretical). Courses in languages, administration, economics, and advanced science.

We Americans may well take to ourselves the words of Evans Lewin: "We Britishers know to our cost that where Germans have outstripped us they have done so by virtue of superior educational facilities," and we may add "and others" to Germans.

The industrial development of Germany was, to a considerable extent, based on an investigation of the sources of raw material in the colonies of other powers. The palm product trade of Dahomey is controlled by Germans, and we buy from Hamburg second-grade palm oil, extracted in Germany from kernels

[1] See Evans Lewin—The Germans and Africa.

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imported from the French colony, and palm oil is a product of increasing importance in this country. The important trade in hides, in India, is controlled by Germans who have studied India and the trade to some purpose.[2] These are but instances of German enterprise backed by careful preparation.

In suggesting a course for preparation for colonial service, it is assumed that the student has taken subjects offered in a general course of preparation for foreign service, modern languages, commercial and maritime law, etc., modern history, diplomatic and political history, foreign exchange, etc. The colonial course should, therefore, be offered to seniors, and possibly to juniors. It is, of course, highly desirable that the student should have some knowledge of the principal language spoken by the natives in the colony where he intends to serve. A satisfactory course should extend over two half years, but could be covered with considerable profit in one half year, three hours per week, if some subjects included in the suggested plan were covered in usual courses in history, economics, etc., and such subjects as hygiene, tropical medicine, etc., were taken up in special lectures.

A course proposed for preparation for colonial service:

A. Outline history of colonization (with special reference to modern times).
B. Present systems of colonial government, including dependencies (with particular reference to the possessions of Great Britain, France, Germany, and the United States).
    1. Colonies for colonization.
    2. Colonies primarily for commercial development.
C. The relation of the colony to the mother country. The question of trade following the flag.
D. The future of colonies, as affected, for example, by the character of the population, by climatic conditions, etc.
E. The question of colonial self-determination in respect to form of government and policies.
F. Investigation of representative colonies:
    1. Nature of products and probability of increase.
    2. Nature of imports—what goods not now imported should find a market in the colony under discussion.
    3. Tariff system and special local charges on commerce and business.
    4. What opportunity appears to be open to the United States as buyer or seller.

    How would local discrimination in such matters as banking and shipping facilities affect trade with the United States?
G. Hygiene and tropical medicine.
H. Foreign possessions of the United States:
    1. History of the foreign possessions of the United States.
    2. Analysis of conditions in each of the possessions.
        (*a*) Administration.
        (*b*) Population, language, customs, laws.
        (*c*) Products, imports, exports.
        (*d*) Growth of commerce—commercial relations with the various countries.

The suggestion that some of these subjects could be treated by extending other regular courses is possible but certainly not desirable; they should be studied in their relation to each other, and this can not be done if the student gathers his knowledge bit by bit from courses not directly concerned with colonial questions.

Textbooks could not be used to advantage. The student should have access, at least, to a small, well-selected library on colonial questions. But most of the works should be found in any well-equipped college library.

[2] It is interesting to note that in 1913 and the first six months of 1914 Germany enormously increased her imports of hides from India.

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MODERN INTERNATIONALISM.

By STANLEY K. HORNBECK,
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The term "internationalism" has been found difficult of definition, and its connotation has been variously conceived for the reason that it applies to a relationship which is dual or multiple in its aspects—relationships really actual in some phases, potential in some others, concrete from certain points of view, abstract from others. Reference to the widely differing efforts of various lexicographers shows that the term is susceptible more readily of description than of definition. Dr. Faries has defined and described it effectively, as follows:

> Internationalism may be defined to be that cooperation between governments or their citizens which tends to coordinate their efforts toward material betterment in the interests of the whole social order. Such * * * may be official. * * * or may be unofficial * * *. We are warranted * * * in including within internationalism that cooperation of the citizens of various nations which may fall far short of international law.—(*The Rise of Internationalism, 12–13.*)

A reasonably satisfactory short definition appears in Webster's International Dictionary, 1913: "Internationalism—international organization, influence, or common participation."

Internationalism has its political manifestations, its economic manifestations, its occupational, its cultural, its social, its humanitarian, and its purely sentimental manifestations, some formal, some informal, some accidental and scarcely to be observed. Organization, effort, thought, which goes beyond the boundaries of a single national state becomes international; the more consciously, deliberately, and widely it goes, the more evidently and conclusively does it belong within the connotation of the term "internationalism."

In presenting this subject to any class, the first problem to be solved is that of orientation; the second is that of establishing limitations. The great difference in the backgrounds of different groups and the unevenness in the preparation of the individuals composing any given group challenge the perception and the skill of the instructor. Under ideal conditions there would be, prerequisite to taking this course, preparation in general history, the principles of economics, the elements of political science, of sociology, and of psychology; also, highly desirable, a knowledge of comparative government, constitutional law, and international law. This list might be expanded; but, brief as it is, few students will have the point of departure which it suggests, and some will have little knowledge of any of those subjects.

In the attempt to treat the subject with due regard to the preparation and needs of the average class and within the time limitations of, say, 30 periods of 50 minutes each, it is desirable to have a definite and formal plan of procedure. To keep the furrows straight and at the same time cover the field within the allotted number of periods, this is absolutely essential. The invitation which the subject gives to discursiveness, abstraction, and mere speculation must at no point be accepted. The instructor should demonstrate by his arrangement of materials and handling of discussions that the subject is of vital and practical, not merely academic and cultural, interest.

A working outline for such a course, susceptible of modification, especially of omission, may include the following subjects:

I. Introduction and elementary concepts.
II. Nations and the family of nations. The growth of social consciousness and of political and legal practices.

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III. The intercourse of states: Diplomacy, conferences, congresses, and treaties.
IV. International differences and methods of settlement, historical and actual.
V. Movements toward and evidences of Cooperation and Organization:
  A. Deductive Pacifism—History and Characterization.
  B. Inductive Pacifism—
    1. Task.
    2. Agencies and methods.
  C. International practices, instruments, and influences—
    1. International law.
    2. International leagues.
    3. International commissions.
    4. International alliances.
    5. International courts.
    6. International arbitration.
    7. International unions, official and unofficial.
    8. International conferences and congresses, official and unofficial.
    9. International movements based on community of interest or thought in connection with legislative, economic, scientific, educational, artistic, religious, social, recreational, and miscellaneous vocational and avocational activities.
    10. International influence of financial, commercial, and industrial developments.
    11. International influence of the development of means of transportation and communication, migration, travel, dissemination of news, and popular education.
VI. Proposed International Instruments (including leagues, federations, and a world state).
VII. Obstacles and Difficulties. Diversity of languages, race, location, and physical environment.
VIII. Problems of the Immediate Future. Diplomatic readjustment and settlement. Reconstruction—political, economic, social, physical, psychological, philosophical.

No two instructors will adopt identical outlines or employ the same methods of presentation. The following is a possible procedure: At the outset the instructor posts an extensive bibliography, containing references both of a general and of a particular nature; and he distributes syllabi in which there appear under each of the above titles references (*a*) to required reading, (*b*) to optional reading, and under some of the headings a series of subtopics and divisions. Each of the titles becomes the subject of a preliminary lecture. The earlier titles must be treated briefly, from considerations of time and proportion. At each meeting of the class an opportunity is given for asking questions and for brief discussion. After the eighth lecture a whole period or more is given to extensive quizzing and general discussion. From this point on, the burden of presentation is thrown more and more upon the students. To economize time, certain of the subjects are assigned to individual students for special preparation and organized reports, the recitation period assuming something of the character of a seminar. After the nineteenth title (C. 11) has been disposed of, the task of presentation devolves again chiefly upon the instructor.

Throughout the course it is essential to emphasize the evolutionary aspects of political and social development, to refer constantly to historical examples, to direct and redirect the attention of the student to inherent and fundamental facts. In the problems presented, human nature and human institutions are the beginning and the end; they represent what *is*, and their potentialities are the limitations of what may be. The student must learn to distinguish between that which is susceptible of immediate accomplishment and that which can only be achieved or consummated in *time*—a short period or a long. In

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no other field has the instructor better opportunity to demonstrate the difference between deductive and inductive constructive reasoning, and to show in reference to political problems the futility of mere speculation and benevolence of attitude without substantial knowledge of facts and scientific respect for fundamental considerations.

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PART III. MODERN FOREIGN LANGUAGES.

THE TEACHING OF CHINESE AND JAPANESE LANGUAGES.

By E. T. WILLIAMS,

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The advantage of being able to speak the language of the people with whom one trades is so obvious as scarcely to need mention.

American commerce with the Far East began in 1784 with the very beginning of our national history. It is already of great importance, but undoubtedly it is destined to have rapid increase after the war. In the past it has been conducted very largely by the aid of the Chinese compradore, who has been the medium of communication between the American and the Chinese merchants.

In the good old days of Salem shipowners and clipper ships, when there was a wide margin between the price paid to the producer or the native merchant and that paid by the consumer, the commission of the compradore was not a matter of great concern; he grew rich, but the firm also prospered. In these days, however, of keen competition, the margin of profit is comparatively small, and the firm that can remove unnecessary handicaps will have an advantage. German houses doing business in the Far East began years ago to send out young men to study the languages of the countries in which they were to be located, and through these agents they have been able to come into direct communication with native firms.

Some American and British companies have followed this example. The Standard Oil Co. has given considerable attention to the matter, and the British American Tobacco Co. has met with enviable success in so training their young men in China.

It may not be desirable to get rid altogether of the compradore, especially in certain lines of trade, for he has a wide acquaintance with the merchants with whom it is necessary to deal, and he has the expert knowledge of the conditions of the trade, but the firm that can on occasion be independent of the compradore is by so much in advance of the rival company that is wholly dependent upon him.

The study of the Chinese and Japanese languages, however, is not easy, and it is more than doubtful that anyone can acquire a workable knowledge of the colloquial in either tongue without the aid of a teacher. There are, to be sure, pocket vocabularies and phrase books which a traveller will find useful and which will enable him to make known his most pressing wants, but to be able to conduct business negotiations, one must have more than this, and that will require him to get the pronunciation from the lips of another. This is especially true of the Chinese, for the meaning of a syllable in that language changes entirely with a change of the tone in which it is spoken. The meaning of the written or printed character can indeed be learned without a knowledge of the pronunciation, and it is possible therefore for the student to teach himself to read a book or newspaper, but this would be of small advantage without the ability to converse in the language. The tones can not be learned from books.

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With Japanese it is different, but there are other difficulties in acquiring that language.

The American Government since 1902 has maintained classes of young men at the legation in Peking and at the embassies in Tokyo and Constantinople for the study of the languages of China, Japan, and Turkey. These young men after two years' study at the legation or embassy are sent to the various consulates of the United States in the countries mentioned to be assistant interpreters. Gradually they are advanced in rank and become vice consuls, consuls, consuls general, and language secretaries at the embassies.

The same course is adopted by the British, French, and German Governments. It has been found that a two years' course in the language at Peking or Tokyo enables the student to speak upon ordinary topics with some facility and to translate with the aid of a dictionary the dispatches passing between the American officials and those of the country to which they are accredited. But it is still necessary for them to have the assistance of a Chinese or Japanese writer to insure that their translations from English into Chinese or Japanese are without fault.

It would seem advisable, therefore, in introducing the study of these languages into American colleges and universities to require not less than a two years' course in either. The student even then can not expect to acquire facility in speaking, for he can give but a small part of his time to this subject, and he will rarely find anyone with whom to converse. Most of the Chinese in the United States do not speak mandarin Chinese and do not understand it.

Numerous textbooks have been prepared for the teaching of Chinese and Japanese. In the British legation at Peking, in the Chinese customs service, and formerly in the American legation the students were required to use the *Tzu Erh Chi* of Sir Thomas Wade. This is a work in three large volumes, published by Messrs. Kelly & Walsh, of Shanghai, and by W. H. Allen & Co., London. It gives a course in the spoken language. For the written language there is a companion volume, known as "The Documentary Series."

The students in the American legation at Peking, after some experience with Wade, made trial of Mateer's "Course of Mandarin Lessons," published by the Presbyterian Mission Press at Shanghai. This on the whole will be found more useful than Wade. This university has been using it in preference to any other available. Two objections lie against it; it is too bulky and was prepared primarily for the use of missionaries. It is therefore not so useful as it might be for men preparing for a business career. This latter objection, however, is less important than might appear upon first thought, for one can abridge the lessons and supplement them with books of conversation to be mentioned below. A smaller and less expensive book for beginners in Chinese is Baller's "Mandarin Primer," also published by the Presbyterian Mission Press at Shanghai. This, too, is especially arranged for missionaries. Other very good books for beginners are those by Sir Walter Hillier and by a former British consul, Bullock. Hillier's has been used to some extent in the American legation at Peking. "An introduction to Mandarin," in Chinese and English, is on sale in Chinese book shops in San Francisco, and is a good book for beginners. It is published in two small volumes, price $1.50. For a study of the characters, a work in two volumes by Dr. Leon Wieger is excellent. It is called "Chinese Characters," and is published by the Ho Kien Fu Catholic Mission Press. The best Chinese-English dictionaries are those of Giles, published by Kelly & Walsh, Shanghai and Yokohama; and Williams' Syllabic Dictionary, published by the North China Union College, Peking. The English-Chinese dictionary is published by the Chinese Maritime Customs, prepared by K. Hemeling.

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No matter with what book one begins, it is well to supplement it after a few months with the "Kuan Hua Chih Nan," or "Guide to Mandarin," a book of conversations, prepared by a Japanese student of Chinese, and thoroughly idiomatic. A similar work, which introduces many of the newer terms and valuable on this account is the "T'an Lun Hsin P'ien." This also was prepared in Japan and may be purchased of Messrs. Kelly and Walsh, Yokohama and Shanghai.

The student ought to begin to write the characters at the very beginning, even while giving his attention chiefly to the colloquial. At the end of two years he should be able to recognize and to write 3,000 characters. The second year he should find time to acquaint himself with portions of the Chinese classics, a few chapters from the Analects of Confucius and the works of Mencius, but for business use a study of newspaper and documentary Chinese will be of more service. Wade's or Lay's Documentary Chinese will be found good. A Chinese newspaper is excellent for this purpose. The use of particles and the method of construction are well explained by Hirth's "Notes on Chinese Documentary Style," Kelly & Walsh, Shanghai.

As intimated above, it is not so difficult to teach oneself Japanese as Chinese. For beginners there are several good books: "A Textbook of Colloquial Japanese," by Dr. Rudolf Lange, published by the Methodist Publishing House, Tokyo; "How to Speak Japanese Correctly," by K. Akada and J. Satomi, published by R. Z. Okazakiya & Co., Tokyo; "Plaut's Conversation Grammar," Brentano's, New York and Washington.

THE TEACHING OF GERMAN AND DUTCH FOR FOREIGN SERVICE.

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With the elevation of the United States of America into the front rank of a world power comes the grave responsibility of training comprehensively and efficiently for foreign service. The representatives of this Nation abroad, whether they represent the Government or stand sponsors to great commercial or industrial enterprises, should reflect honor and credit upon their country. This they can do only if, to state a minimum, they are esteemed as on a par intellectually, educationally, and culturally with those whose interests for the time being are their interests, and with whom they are expected to communicate and to transact business.

Among the educational requirements for really intelligent and successful foreign service a facile knowledge of the language of the foreign country becomes at once a fundamental demand. Without a full control of the language, one's understanding of that foreign country is made difficult, if not wellnigh impossible, and thus the function of foreign service is reduced and impaired. Interpreters and translations may become good makeshifts, but he who controls the idiomatic side of the new foreign language controls the sourcehead; and it is this kind of power and control that we wish our foreign representatives to possess and to be able to exercise.

But not only for practical and immediately utilitarian purposes is it necessary that our foreign representative know fully the language of the country to which he is assigned. There is, also, a larger and ideal point of view with regard to modern language instruction which it behooves us, now that America has left its sphere of parochial isolation, to consider with a feeling of sacred obligation both to ourselves and to the rest of the world. This larger function of the modern languages is nothing more nor less than its service in establishing international understanding, amity, sympathy, and good will.

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This high ideal of what the modern languages should accomplish was in the minds of the reformers who set about in the eighties to vitalize the modern language instruction and thus save it from the impending fate of being crushed under the heavy weight of classic tradition. If misunderstandings are possible between persons of the same speech, how much greater is the possibility of misunderstanding between persons, or nations, of different speech? And misunderstanding is the mother of all the evils of prejudice, bias, and enmity. It appears, then, that in the large and responsible work of reconstruction, not only of immediately national affairs, but of international relations, the modern languages are called upon to do a service which is at once as practical as it is high and ennobling.

Granted this function of the modern languages in the service of international ideals making for mutual understanding and friendship, it becomes our bounden duty to encourage the study of the world's modern languages and to raise the standard of instruction in these languages to a high plane of efficiency. Our foreign representatives are entitled to the best instruction that can be given them.

What is the best instruction in modern languages for those who represent this Nation abroad? In a sentence, it is that instruction which makes for the goal of giving the student a comprehensive control of the new speech habits, and does so by using a method which is scientifically and pedagogically unassailable. At once it is clear that instruction for foreign service does not differ in fundamentals from the instruction for any other kind of service. That is preeminently the point.

Any language is, at best, a tool which when thoroughly controlled may be easily turned to any kind of service; it may serve as a key to unlock the treasure house of literary values, or it may become a function for practical ends. At any rate, without a thorough mastery of the tool, the function or service of this tool is inadequate. The recognition of this programmatic point of view can only be salutary for the future of modern language instruction. It means that thorough instruction in the language as language shall precede any attempts to use that language in its various and possible functions. The emphasis would not discourage literary values, even at an early stage in the acquisition of the new tongue, but it would insist that correct speech habits be learned and thoroughly mastered. The whole question really is one of time allotment to the various phases of learning and one of emphasis as to what discipline shall precede or follow.

The brief limits of this paper can merely state what is in the minds of progressive modern language teachers to-day with regard to how to teach and how to learn a living tongue. Axiomatically expressed it is this injunction: If German, for instance, is a living modern language, then teach it as such. The implication is that every appeal is utilized which makes for the vital acquisition and live use of the new speech habits. Not only the eye, but also the ear and the speech organs are called upon in the learning. The progressive view makes more of pronunciation than was done formerly. It frankly uses the foreign tongue in the classroom and urges the student to do so. It tries to teach the language, and not only the grammar. It insists on genuine reading of a connected text, and stresses reproductive work in the language itself rather than translation. In short, it makes every sense appeal that it is possible to make and conserves every moment possible for the use of, and drill in, the foreign language to be mastered. Then, too, in a modern language, having

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to do with a modern people, the content of texts and paragraphs will deal with matter pertaining to that modern people to-day. That is to say, the customs, habits, institutions, and general life of the foreign nation will receive attention. In short, when we demand that a modern language shall be heard and spoken in the classroom, we are pleading not for the lingual facileness of a waiter or a porter, but for a discipline which more adequately and comprehensively than in the past permits us to realize the aim of modern language instruction which is and always will be the acquisition of new speech habits.

It is such intensive training in modern languages that should be placed at the command of our foreign service. We can not afford to do less. The training for modern languages should be begun in the seventh and eighth grades, with full opportunity of election throughout the four years of the high school. Only then can we hope to carry out an important mission really well and with telling results.[1]

THE TEACHING OF ROMANCE LANGUAGES.

By VICTOR E. FRANÇOIS,

Associate Professor of French, College of the City of New York.

We take for granted[2] that for an American student preparing himself for foreign service, French, the language of diplomacy for the last three centuries, is considered indispensable.

For obvious reasons, Spanish comes a close second in importance, and we are ready to concede that it should take precedence of French in schools of States bordering Mexico, since this plan of studies concerns not only students intending to enter the foreign service, but also those anxious to pursue a commercial career.

Our choice for the third language is Italian, not because Portuguese[3] is of less value, but because it is so similar to Spanish that it should be easily mastered by students who have a good knowledge of the latter.

May we be allowed to point to a few causes of the so much talked of failure of foreign language teaching in the United States?

There is no denying that there is poor material among teachers of modern languages; some are trying to teach a subject that they themselves have never

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[1] What has been said applies, of course, to the teaching and learning of modern German and modern Dutch, with this comment, that of these two modern Germanic languages, the former is more important and should receive the greater emphasis in the curriculum. For German, Viëtor's Deutsches Aussprachewörterbuch, 2d edition, is fundamental in learning the pronunciation. For training in commercial German the following books may prove helpful: (1) Graham and Oliver, German Commercial Practice connected with the Export and Import Trade, 2 volumes. Vol. I (1904); Vol. II (1906). Macmillan, London. (2) Arnold Kutner, Commercial German, 1903, American Book Co. (3) F. Coverly Smith, Introduction to Commercial German, 1903, Macmillan, London.

[2] Some time ago a committee of well-known business men and educators, appointed by the Government of Great Britain to investigate the problem of education for those wishing to prepare for foreign trade, recommended that a much greater time be given to the study of French, French being "by far the most important language in the history of modern civilization."

[3] A strong plea for the study of French and Portuguese was made by a Brazilian, Clinton D. Smith, before the Educational Conference on training for foreign service on December 31, 1915. (See Bul. 1917, No. 37, pp. 35-36. Department of Interior. Bu. of Educ.)

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been able to master, and the situation is worse now than before the war.[4] One of the greatest difficulties which American educational institutions are facing is to find well qualified teachers of French, Spanish, and Portuguese. Good teachers of Italian can be found in sufficient numbers, but school authorities are clamoring for experienced teachers of Spanish, and a real teacher of Portuguese is a *rara avis*. As far as French is concerned, we expect that the problem will soon be solved. Many alumni and alumnæ of American colleges and universities have been in France for one and even two years. We hope that a large number of them will turn to the teaching of the French language. They can not fail to become inspiring teachers.

But the best teacher of modern languages is absolutely helpless as long as his classes are as large as they are: 30 to 40. The number of students in any class in the department of modern languages should not exceed 20. An average of 15 should be the rule, if good results are to be expected.[5] Imagine a piano teacher trying to teach 30 or 40 students simultaneously how to play the piano in a short period varying from 40 to 50 minutes. One minute's attention to each boy. That is the condition teachers of modern languages are facing every day.

Another stumbling block in the path of teachers is the indifferent attitude of the average American student toward his studies. Is it not greatly due to the fact that he has not the least idea of the career he may wish to follow later in life? Whether he will pursue this special vocation or not, is immaterial. His choice of the future profession, even if vague, need not lead to a premature specialization in his studies, as some seem to fear; besides being an incentive, it would serve as a kind of beacon to guide him through the maze of his college curriculum. Having no definite aim, he gropes his way toward a general education by taking a motley combination of courses which leads him nowhere.

To remedy this defect, a thorough psychological test should be given to every boy before being admitted to a high school, and a report sent to his parents or guardian with proper directions as to the kind of studies his mental ability fits him to take most profitably.

Another serious drawback is the lack of memory training in our elementary and secondary schools. A boy with a poor memory will never become a good linguist.

Time to be devoted to the preparation of students: Schedule I obtains if a junior high school is available; Schedule II, if there is no junior high school; Schedule III, if no romance language has been studied in the preparatory school.

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[4] See the Modern Language Journal, March, 1918, p. 284: "On a motion of Professor Smith, of Wisconsin, a resolution was passed calling attention to the very real danger in the fields of French and Spanish due to the shift of poorly prepared and unsympathetic teachers from other branches, and expressing the section's strong disapproval of such changes being allowed by administrative officers in colleges and secondary schools."

See Bulletin of High Points, edited by Lawrence A. Wilkins, in charge of modern languages in high schools. Board of Education, of New York City, March, 1918, p. 14: "A teacher who gives only a portion of his time to instruction in a subject may be called a 'fractional' teacher of that subject. In the 24 high schools there are 61.97 teachers of German engaged in giving instruction in some foreign language other than German."

[5] See an article by Henry Zick in Bulletin of High School Teachers' Association of New York City, April, 1916, p. 6: "I visited, in all, eight secondary schools in and out of London. All the schools I visited had four excellent features: (1) They laid stress on a good pronunciation and used sound-chords; (2) the work was properly graded; (3) the teachers had a good command of the foreign language, and (4) the classes were small, from 10 to 25 pupils."

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SCHEDULE I.

JUNIOR HIGH SCHOOL.

	First language.
First year	5 periods per week.
Second year	5 periods per week.

HIGH SCHOOL.

	First language.	Second language.	Third language.	Fourth language.
Third year	5 periods	5 periods		
Fourth year	5 periods	5 periods	5 periods	
Fifth year	4 periods	4 periods	4 periods	
Sixth year	3 periods	3 periods	3 periods	5 periods.

COLLEGE.

Three periods for each language throughout.[6]

SCHEDULE II.

HIGH SCHOOL.

	First language.	Second language.	Third language.	Fourth language.
First year	5 periods			
Second year	5 periods	5 periods		
Third year	4 periods	4 periods	4 periods	
Fourth year	3 periods	3 periods	3 periods	5 periods.

COLLEGE.

Three periods for each language throughout.[6]

SCHEDULE III.

COLLEGE.

	First language.	Second language.	Third language.	Fourth language.
First year	5 periods			
Second year	5 periods	3 periods		
Third year	3 periods	3 periods	3 periods	
Fourth year	3 periods	3 periods	3 periods	3 periods.

METHODS.

SCHEDULE I.

JUNIOR HIGH SCHOOL.[7]

First language.

First year: **Five periods per week. Pronunciation (daily training). Description of the classroom, the school, persons, animals, familiar objects, pictures representing simple scenes, common actions to bring out important verbs (present indicative, past definite, future). Maps, numbers 1–100; days of the week, seasons, months, dates, weather, time of day, the five senses, games, little songs and short poems to be memorized.**

[6] If three languages are studied instead of four, which is likely, the periods for the first and second languages may be increased to four; if only two languages are studied, the periods may be increased to five.

[7] A detailed description of these courses is given because they are still in the experimental stage.

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No formal grammar. Emphasis laid on correct pronunciation. Mostly oral work, carefully graded. The best teacher should be in charge.

If French is the first language, use such simple books as *First Year In French*, by Syms (American Book Co.), or *First French Book*, by J. Greenberg (Charles Merrill Co.), leaving the translation of English exercises for the very end of the year, if at all, or Bercy's books for children (Wm. Jenkins), pictures such as *Tableaux Muraux Delmas* (Hachette and Co., London).

If Spanish is chosen as first language, use such easy books as Worman's Spanish books (American Book Co.). The pictures mentioned above may be used for Spanish as well.

Second year: Five periods per week. Continuation of the work done during the first year along the same lines. Daily drill in pronunciation. More pictures, more maps, more games, numbers 1–1000; notions of history, geography, arithmetic, fractions, metric systems, etc.; the three kingdoms of nature, all in the language to be learned. A very easy reader, with a commercial bias if possible. Rudiments of the grammar taught from the reading. Oral exercises of all kinds also based on that textbook. Very little translation of the foreign language into English should be done except to show the pupils how to go about it. No literal translation should be allowed. Frequent dictations of short sentences, of short stories. Songs, short stories, or short poems memorized.

High-School Courses.

Third and fourth years: In the third and fourth years (respectively the first and second years in attendance) graduates of a junior high school should be able to do the work that is done at present during the first three years in a first-class high school.

Any method suiting the individuality of the teacher and leading on the part of the pupils to thorough work and self expression should be encouraged. Whatever may be the method, the teacher should adhere to the motto: A minimum of grammatical rules and translation, and a maximum of oral work.

If formal grammar is started, it should proceed slowly, with special stress on fundamental principles and constant drill on verbs.

Translation of the foreign language into English should be done only in the case of difficult passages and idioms. A careful selection of the texts on which to base the lessons will minimize that kind of work. Translation of English into the foreign language should be attempted, if at all, only toward the end of the first year as review work. Later on easy composition may be used.

Teachers may ease their work by using textbooks provided with exercises giving material for drill work along up-to-date lines.

In the program of the first three years of high schools, books with commercial tendencies are seldom read. To fill that want, numerous dictations on the country, the language of which is learned, its climate, customs, daily life, government, general industry, commerce, etc., should be given. Proverbs and easy idiomatic sentences should be memorized.

Fifth and sixth years: So far academic and commercial courses can go hand in hand with a commercial flavor if the majority of students are preparing for a business career. Now the work should be somewhat specialized and commercial textbooks put into the hands of the pupils, with the same methods as described above prevailing. Constant oral work, much dictation by the teacher or leading pupils, a minimum of translation of the foreign language into English, etc.

From now on one hour per week should be set aside for the reading of an easy text or newspaper in the first language at sight, a student reading aloud one paragraph at a time, the teacher translating or better explaining the words unfamiliar to the class, and a second student summing up the paragraph in the language taught. Reading at sight should start for the second language at the beginning of the sixth year. This kind of work increases the confidence of the scholars and encourages independent reading.

They should also be urged to avail themselves of every occasion to improve their practical knowledge of the language in which they are interested: (*a*) An exchange of letters with youths of their age abroad; (*b*) participation in a foreign language club; (*c*) use of a dictionary purely French or Spanish; (*d*) sermons, lectures, plays, newspapers, and reviews in the foreign language; (*e*) acquaintance with people speaking that language, etc.

FRENCH.

Fifth year.

Notions de commerce, by Coudray and Cuxax (H. Dunod—E. Pinat, éditeurs, 47, Quai des Grands Augustins, Paris).

Eléments de commerce et de comptabilité, par Gabriel Faure (Masson et Cie, éditeurs 120, boulevard St. Germain, Paris).

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At sight. *Edition hebdomadaire du Courrier des Etats-Unis*, New York City, or *Le Petit Journal*, published by Doubleday, Page & Co., Garden City, N. Y.

Sixth year.

French Commercial Practice (II parts), by Graham and Oliver (Macmillan & Co., London).

At sight. *La France qui travaille*, by Jago (D. C. Heath & Co., Boston).

or

Revue commerciale et industrielle franco-américaine, published by Le Courrier des Etats-Unis, New York City.

SPANISH.

Fifth year (if first language).

Harrison's *Spanish Correspondence* (Henry Holt & Co., New York City).

McHale's *Commercial Spanish* (D. C. Heath & Co., Boston).

At sight. Albes: *Viajando por Sud America* edited by Warshaw (Henry Holt & Co., New York City).

or

El Eco (Doubleday, Page & Co., Garden City, N. Y.).

Dictionary: *Pequeño Larousse ilustrado* (Larousse, Paris).

Sixth year.

Spanish Commercial Correspondence by Whittem and Andrade (D. C. Heath & Co., Boston).

Fuentes and Elías: *Manual de Correspondencia* (Macmillan Co., New York City).

At sight: Nelson's *The Spanish American Reader* (D. C. Heath & Co., Boston).

or

La Prensa (daily) New York City.

COLLEGE.

On entering college after six consecutive years of the first language students should be able to speak it fluently and correctly and to write it idiomatically. So college courses should be looked upon as seminar work, aiming at retaining and improving the grasp of the language learnt in the previous years.[8]

Such courses should be conducted entirely in the foreign language and based on technical publications, such as foreign consular reports, reports of foreign touring clubs and chambers of commerce, commercial and industrial reviews, the bulletins (Spanish and Portuguese) of the Pan American Union, etc., with one hour per week entirely devoted to sight reading.

Higher institutions should create for such students a special atmosphere that would replace, in part only of course, a sojourn abroad. A large room should be set aside for them where they would constantly meet other young men interested in similar studies, and find a library answering their needs, foreign newspapers and periodicals of all kinds, a miniature museum displaying industrial, mining, vegetable products, etc., with their names in several languages, various wall maps, lantern slides or moving pictures showing the daily life, industry, commerce, natural beauties, etc., of foreign lands, the scenes being explained in the foreign language or forming topics for general discussion, round table conferences, frequent lectures, games, a phonograph with records of foreign songs, etc.

This environment, artificial, it is true, but indispensable, could be more thorough by the cooperation of the departments of history, geography, mathematics, economics, law, etc., in using foreign textbooks in their elective courses.

Students should be urged to visit during their summer vacations the country the language of which they are studying. Scholarships for such trips might be offered by the Federal Government or the colleges through competitive examinations.

Auxiliary languages (i. e., third and fourth languages).—The methods and directions given for the first and second languages should be followed, but the class would be able to proceed at a much faster pace.

Schedule II (high school and college).—See methods and directions for Schedule I, but the work would necessarily be slower, especially during the first two years.

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[8] If students preparing for foreign service are not numerous enough to form a section by themselves, they may follow advanced literary courses, but special courses should be given them during their junior and senior years.

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Schedule III (college only).—The work should be intensified along the lines described in Schedule I for high schools and colleges. Students should not take more than two languages, a fact which would permit them to devote five hours a week to both languages right along.

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THE TEACHING OF SCANDINAVIAN LANGUAGES.

BY GISLE BOTHNE.

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One result of our country's participation in the great world struggle will be the demand for an improved and intensive study of modern languages in our educational institutions. If any country ever had the call to assume and strive to maintain leadership among the nations, not only politically and commercially, but also in almost all fields of human activity, that certainly has come to our country. In order to trade most intelligently and profitably with other peoples, and in general to deal with them in a spirit of sympathy and understanding of their peculiarities and characteristics, it is necessary to have that intimate knowledge which only the knowledge of their language can give. And we shall want to maintain henceforth most intimate relations with the

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nations of the world. Already England and France are rearranging and amplifying their school courses for the purpose of giving the foreign languages a much more prominent place than before. And the Scandinavian languages have not been overlooked. England established during the recent war lectureships in the Scandinavian languages at the University of London and other places; and France, in addition to a professorship in the Scandinavian languages at the University of Paris previously established, invited boys from the Scandinavian countries to come to her schools in order to get a thorough training in French, in addition to the subjects required by the corresponding schools at home.

The schools and colleges of our country have given excellent instruction in modern languages in the years gone by, but much more will be demanded in this line in order to fit our young men and women for foreign service. The languages for which there will be the greatest demand will undoubtedly be French, German, Spanish, Russian, Italian. But also other languages will be taught, among them the Scandinavian. The Scandinavian languages comprise Danish, Norwegian, and Swedish. While philologists will continue to cultivate the study of Icelandic, which in its modern form is spoken by some 100,000 people, the other modern Scandinavian languages have much added value in modern times. These languages are spoken by 12 millions who belong to the most enlightened people in Europe. While the three languages are distinct, knowledge of one will make the effort to acquire the other two comparatively easy. The grammar of Norwegian and Danish is somewhat simpler than Swedish, but the student may start with any one of them as he has the opportunity, and a little practice and effort will help him to acquire all.

Great writers have developed the Scandinavian languages into almost perfect instruments of expression in all fields of human thought. All who are familiar with the subject will know that the Scandinavians have produced writers of a high rank, and that their literature has a value far beyond what might be expected from their numbers. It is probable that America will become the center of international scientific research, taking the place in the world occupied by Germany before the war. Our country has this mission on account of the cosmopolitan character of the population, the idealism, enthusiasm, and vigor of the people, the rapid advance in scholarship made within the last 40 or 50 years by great universities and scientific institutions, the wealth and liberality of our country. After we entered the war, steps were taken to make the Scandinavian countries such a center. And there is much that speaks for such a venture, apart from the fact that they have struggled hard to remain neutral in the great World War.

The Scandinavians have produced many scholars whose names are familiar to students in many fields, some, indeed, having attained the highest eminence. For years Scandinavian scholars and writers have been intelligent observers and keen interpreters of scientific achievements and political principles and events in the leading countries. And what has been written in the Scandinavian languages on these lines has a value of its own. Just one example: Those who are familiar with Bjørnson, the great writer and orator, whose familiarity with European politics was almost astounding, and who was one of the few Europeans whose words were listened to by the real leaders of Europe with respect, will remember his characterization of Prussianism, just as apt to-day as when it was written 50 years ago, his championship of the oppressed peoples of Austria-Hungary, just to mention a few instances. He even predicted years ago that the next great war would begin with Austria, though no doubt he had no idea of the colossal dimensions it would assume. An additional argument in favor of the Scandinavian countries as an international center of scientific

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research is found in the fact that they are almost devoid of the national pride so common in the great countries of Europe, which are reluctant to admit the superiority in any field of another nation. The Scandinavians feel that they are under the greatest obligations to European countries like England, France, and Germany, and to America in the fields of science and scholarship, in literature, the arts, and politics; and they are inclined, while they take pride in having produced men who take rank with some of the best, to give each country its due.

Also commercially the Scandinavian countries have a growing importance. The waterfalls of Norway and Sweden are rapidly making these countries great centers of industry. Denmark's agricultural leadership is well known. The shipping industry of Norway has been one of the important factors in the world's trade. The establishment by the three Scandinavian countries of chambers of commerce and banking institutions in New York shows the importance of the trade relations between these countries and America. Here we have a great field which must be enlarged, and everything must be done to maintain cordial relations with the Scandinavian countries. The opportunity is there. The feeling of the Scandinavians toward America is as that of the smaller boys to the big brother. Americans of Norwegian descent number almost as many as the whole population of Norway; Americans of Swedish extraction almost one-half of Sweden's population; and while the emigration from Denmark has not been proportionately so large, the Americans of Danish descent are a most valuable element of our country.

The great bulk of the people from the Scandinavian countries who came to this country to settle have made their homes in the Northwestern States, of which Minneapolis may be called the center. It seemed only natural that the Scandinavian languages, if taught in America at all, would be taught in this section of the country particularly. And that has been and is yet the case. Scandinavian church bodies have established in this territory many schools where excellent instruction in the Scandinavian languages has been given. Americans of Scandinavian descent differ little from other Americans. And why should they be different? As the history of the Scandinavian countries shows a constant struggle for national existence and real democracy, they fall readily in with the American way of thinking, and as an element really reinforce our American ideals. On the language question the Americans of Scandinavian descent reflect as a rule the prevalent opinion of the American communities where they reside. Among the Americans of Scandinavian descent there is unanimity as to the necessity of knowing English, the language of our country. That is not a matter for discussion at all. Even those extremists who would exclude from all our schools all foreign languages have representatives among the Americans of Scandinavian descent. There are quite a few also of Americans of Scandinavian descent, as there are of other Americans, who hold rightly that a knowledge of foreign languages, including the Scandinavian, is highly desirable. We all know the class of Americans who believe the American type is something fixed and rigid, created some time ago and the pattern for all "foreigners" who come to make their homes here. There are others who believe real Americanism consists in considering the American type a living organism developing into the most perfect type of man by retaining the glorious spirit and faith which created and has maintained this Nation and by absorbing with the many national elements of our population also their best characteristics.

But we shall take more interest in the peoples of Europe and the world. We shall want to learn foreign languages. In this Nation, united as never before and with a unity of spirit and purpose, not created, but made manifest

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by the war and a marvel to the world, one group of Americans will cease to treat with condescension and distrust American citizens of "foreign" descent, their equals in all essentials, a thing that has done more to create national groups in our country than anything else. We shall all learn from one another, one American group from the so-called foreigners, as the foreigners gladly have learned so much from those who were here before. And there is plenty of room for improvement along these lines. The time will come when the history of Minnesota and North Dakota, to mention examples, will be written and taught in our public schools, giving full credit to the Scandinavian element, as true and loyal Americans as any, and the countries they come from. The Minnesota Historical Society now has a department containing the largest collection in America of all sorts of publications that throw light on the history of the Scandinavian element. And the Scandinavian languages and history will be continued to be taught at the universities and in the high schools of Minnesota and adjacent States, because we all as Americans demand that there shall be given instruction in this country in these languages, valuable from so many points of view.

The University of Minnesota gives complete courses for the study of the Scandinavian languages, and a number of other universities give all such instruction that there is any demand for. In Minneapolis and St. Paul five high schools give instruction in Norwegian and Swedish, and in many places in Minnesota, North Dakota, Wisconsin, Iowa, and Illinois there is an opportunity to learn these languages. The study of these languages was introduced into high schools only a few years ago, and the line of textbooks is not as complete as desirable. But enough is available for American students to acquire knowledge of these languages, and there are indeed many teachers who are fully equipped to teach them. There are also books for English-speaking students for self-study in these languages, though I think all of this class of books have been published in England. A competent teacher is, of course, always preferable.

A two years' course in college, corresponding to a four years' course in a high school or secondary school, might be summarized as follows:

FIRST YEAR OR ELEMENTARY COURSE.

The purpose of this course is to acquire an accurate pronunciation, an understanding of simple language when spoken, the translation of easy English phrases and sentences into the Scandinavian language taught, Norwegian, Swedish, or Danish, to express in these languages ideas about ordinary experiences in life and about the content of the texts used. Of the methods used may be mentioned, reading aloud by both teacher and class, dictation, the students memorizing conversational prose and easy verse, oral and written translations from English, questioning the class and requiring answers in the language taught, using as material whatever texts the class has. It is not proper to merely translate the reader or the literary selections, but the students should be trained to express in the Scandinavian language taught the ideas he found in the text. And there should be constant drill in the elements of grammar.

Grammars used in this country: P. Groth: Danish Grammar. E. C. Otté: The Danish Language. P. Groth: Norwegian Grammar. J. A. Holvik: Beginner's Book in Norse. M. Michelet: First Book in Norse. A. Louis Elmquist: Swedish Grammar, also Swedish Phonology. E. J. Vickner: Swedish Grammar.

Intended for self-study are H. Forchhammer: How to learn Danish, C. A. Thimm's Norwegian Self-Taught, Swedish Self-Taught (London).

Norwegian Self-Taught. (Sixth edition by Prof. Girondahl, London University, Marlborough Co., London, is very good.)

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SECOND YEAR OR ADVANCED COURSE.

The elementary work should be continued in the intermediate and advanced courses. There should be more conversation and more expression of connected ideas in the language taught, and more translation of English prose. There should be a discussion by the class in the language taught of the contents of the readers or books used. The teacher should furnish material relating to the history and geography of the country studied, and the class should tell what they have heard in the language taught. Students should prepare in Norwegian, Swedish, or Danish résumés of material discussed in class, deliver them in writing or give them orally. There should also be writing of themes and letters. The teacher should tell or read stories or newspaper articles, and the students reproduce them. The study of the grammar should be continued, with the drill required.

REFERENCES.

Norwegian books for American students to be used in these courses have principally been published by the Augsburg Publishing House and Free Church Book Concern in Minneapolis, Swedish texts by the Augustana Publishing House, Rock Island, Ill., and Engberg-Holmberg Publishing Co., Chicago.

A cheap Danish-Norwegian-English Dictionary has been edited by Johannes Magnussen J. Brynildsen's Norsk-Engelsk Ordbog and Engelsk-Norsk-Dansk Ordbog are very good. So are B. J. Birkman: Svensk-Engelsk Ordbok, and E. Wenstrom and E. Lindgren: Engelsk-Svensk Ordbok. T. T. Evanths has recently published "Norsk og dansk Handelsleksikon." J. Guinchard's "Sweden" is an excellent book in English. A similar publication "Norway," published in 1900, is now somewhat out of date, but contains much interesting information. "Boken om Norge (5 vols.) has been published in Christiania for the use of American students and contains much excellent material. Swedish Yearbook (in England) was published in Stockholm in 1921.

In connection with the Danish, Norwegian, and Swedish Legations at Washington, D. C., are press attachés who are willing, when called upon, to give information relating to many Scandinavian subjects.

THE TEACHING OF THE SLAVIC LANGUAGES.

By Leo Wiener,

Professor of Slavic Languages and Literature, Harvard University.

The study of the classical languages has long been endangered by the encroachment of the practical into the college curriculum. Indeed, the classical languages would long ago have suffered a complete fiasco were it not for the important philological bearing that they have had in the German school system, to which even the American schools have subscribed blindly. With the defeat of the German State there is bound to come a total reorganization of the schools, at least as regards language instruction. The philological *raison d'être* of the classical languages must give way to a training in languages, either for the general purpose of linguistic discipline, whatever the language may be, or for the specialized training in modern languages, that is, for the practical purpose of immediate application in daily needs. In the highest type of a school these two purposes will be indissolubly joined.

There are, probably, in the whole range of the European languages none so fit to unite these two purposes as the Slavic languages, more especially Russian, Polish, Bohemian, Serbian, because they combine in an admirable manner the qualities of the classical languages, as trainers of the mind, with the practical side of linguistic study to serve as aids in the vocational training. The Slavic languages in structure resemble Latin and Greek very closely. There is the same grammatical complexity and delicacy of shading, the same wealth of word building, the same intellectual appeal. Contrary to all current prejudice, the Slavic languages are not more difficult than either Latin or Greek, or French or German. The popular prejudice is due to the unfamiliar appearance of the Russian alphabet, the newness of the vocabulary, and the complexity of the declensional and the conjugational system, all of which strikes the student in the very beginning of his studies. But these difficulties are easily

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overcome in a year, after which the great simplicity and freedom of their sentence structure, the utter absence of the periodic, which, for example, in German, keeps increasing, rather than decreasing, in successive years, and the unlimited power of word derivations from a limited basic vocabulary, which is characteristic of the Slavic languages, make them the most fascinating as well as the easiest for direct use in business or science. The Slavic languages, especially Russian, have but one norm for all purposes, whether literature, science, or business. After a two years' course one should be able to correspond, with the help of the dictionary and letter writer, on any usual subject, and a three years' course should give one a ready use for all practical purposes.

From a mere intellectual standpoint our high schools should provide an option in some of the modern languages for those who decline to take a classical course. The schools can not afford to abandon language study entirely; and Slavic languages, especially Russian, should receive an equal treatment with Spanish and French. From a practical standpoint the Slavic languages should appeal to young Americans as no other European language. The Serbians and the Bohemians consider America their best friend, and President Massaryk has said significantly that Bohemia would never forget America, and that it knew how to be grateful. This simply means that endless opportunities will open to young Americans who want to connect in a business way with the Slavic States. The same is true in regard to Poland; but while Serbia, Bohemia, and Poland can at most muster 30 million people, Russia, with its 150 million people, offers unlimited possibilities to generations of Americans. America is almost the only nation which the Russians trust, and to which they will look almost exclusively for help in their reconstruction, and to which they will intrust business of every description. It would be a burning shame if Americans did not in time take advantage of this exceptional opportunity to become the associate of Slavdom. We must begin at once to prepare young men for the task which will be required of them.

We should at once begin by offering a two-years' course in Russian in all the reputable high schools and business schools, wherever a proper Russian instructor can be obtained. Our colleges and higher business schools should offer the same two years in Russian, an additional year or two in Russian, and one and two years' courses in Polish, Bohemian, and Serbian. All these courses should be so arranged that they should lead either to a mere literary course or directly to a business career. This is comparatively easy in the case of the Slavic languages, because, as pointed out above, there is but one norm for all literary styles. Unfortunately we possess no good textbooks or grammars for English-speaking people in Polish, Bohemian, or Serbian, but these can easily be supplied if a demand is created for them. But for the study of Russian there is now no lack of textbooks. Above all of these towers Bondar's Simplified Russian Method, a masterpiece of a textbook, which from the very start furnishes material for a literary and a business course. In schools or in self-instruction it can be used advantageously for two years. Then there are the excellent accented texts published by the Oxford University and Cambridge University presses, and the several textbooks and a grammar by Neville Forbes. Of the many dictionaries in existence, Alexandroff's is still the best.

NOTE.—Frequent requests for books helpful in the self-study of the Russian language induced the editor of this bulletin to issue early in 1918 the following list of books constructed and adapted largely with the object in view:

Bondar. Simplified Russian method. London, Effingham Wilson, 1915.

Bondar's Russian readers, Nos. 1–5, published by same firm, may be used shortly after beginning the grammar.

Forbes, Neville. Russian grammar. Oxford, Clarendon Press.

Karrachy-Smith. Lessons in Russian. London, S. Low, Marston & Co., 1915.

A key to the exercises of this grammar is also published by the same publisher.

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Magnus, L. A. A concise grammar of the Russian language. London, J. Murray, 1916.
Manasovich, Boris. A Russian manual for self-tuition. London, Kegan Paul, Trench, Trübner & Co., 1915.
Motti, Pietro. Russian conversation grammar. London, D. Nutt.
Rappoport, S. Hossfeld's new practical method for learning the Russian language. London, Hirschfeld Bros., 1916.
Riola, Henry. How to learn Russian. Based upon the Ollendorffian system and adapted for self-instruction. London, Kegan Paul, Trench, Trübner & Co.
It is advisable for self-study to purchase the key to the exercises of Riola's grammar. This key is published by the same firm.
Russian grammar simplified. Published by Hugo's Institute for Teaching Foreign Languages.
Russian reading made easy. Published by Hugo's Institute, etc.
May be used soon after beginning the grammar.
Solomonoff, J. Russian composition. Parts I, II, and III. London, Kegan Paul, Trench, Trübner & Co., 1916.
Mr. Solomonoff is instructor in the London County Council evening commercial institutes.

The serious student of Russian will find it advisable to buy early in the study of the language a simple dictionary. The Russian dictionary, by A. Wassilieff in the Langham series, published by Charles Scribner's Sons, contains the usual words with their pronunciation figured. David McKay, Philadelphia, publishes Hill's Vest-pocket English-Russian dictionary. W. J. Hernan, New York City, publishes a small phrase book of about 50 pages—What you want to say and how to say it in Russian.

IMPORTANCE OF TURKISH AND ARMENIAN LANGUAGES FOR FOREIGN SERVICE.

By ABRAHAM YOHANNAN.

TURKISH.

Turkish was the language of one of the greatest countries in Europe and Asia during the sixteenth and seventeenth centuries. A power which once influenced half the world, it overthrew and established empires, usurped the thrones of Persia, Arabia, Egypt, and Greece, and was dreaded by Italy, France, and Germany. Even now the Turkish language is spoken by millions of people belonging to a vast empire, and is more or less used in official circles from Tunis in Africa to the walls of China. It is the court language of western Persia; and in many provinces of south Russia and Afghanistan it is spoken as much as Persian. There are at least 25 written languages used in the Ottoman Empire, yet in spite of this babel of tongues, which is found chiefly at Constantinople, the strong individuality of the Turk has manifested itself in politics and government.

It is a regrettable fact that such a language has hitherto received little or no attention in America. The complete ignorance of it on the part of our countrymen has, from time to time, greatly impeded proper communication and intercourse between the two nations and given rise to most serious misunderstandings and difficulties in diplomatic as well as commercial affairs. A practical knowledge of the Turkish language is a requisite of diplomatic and commercial relations with the Ottoman Empire. It is essential in conducting the export trade of this country with the Mohammedan world, and in unfolding the treasures of modern science to the population.

It is expected that in the development of international relations there will in all probability result a closer connection between Turkey and the United States, and a growth of mutual interest. The secret of the success of certain European nations who gained prestige in dealing with the Turks, as well as with other orientals, lies in the fact that they learned their languages, adopted their customs, wore their costumes, and learned their mode of living; hence, they gained an intimate knowledge of their character, their needs, and requirements, and dealt with them accordingly. European manufacturers, for instance, understood perfectly the kind and style of goods and articles that were generally used by the orientals, and they supplied articles in that style, though it seems in many cases to be very clumsy and unwieldy to westerners. Bartering with a Turk is a complicated process and very vexatious, especially to one

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who does not speak his language and know his habits. Scarcely a shopkeeper makes even a pretense of having a fixed price. He asks more than he expects, allowing a wide margin for dickering. If he should get what he asked, he would regret that he did not ask more. We must lose no opportunity to place ourselves in close communication both with the governing Ottoman element and with the numerous races subject to its sway.

While it is true that English-speaking interpreters are available in the principal centers, yet it is infinitely preferable to conduct negotiations of any kind directly, rather than by means of intermediaries of doubtful accuracy. And in the smaller towns it is practically impossible to find persons with sufficient command of English to render them suitable as interpreters. Furthermore, it is important for commercial enterprises to be able to prepare information and catalogues and lists in Turkish, since English is understood only by an infinitesimal part of the population.

A system of courses should be established by colleges and universities, designed to prepare students for foreign service in Turkey, either in the service of the United States Government, in business enterprises, or in scientific investigations. The courses thus offered should aim to make the students familiar with the general subjects required for successful work in Turkey, to enable them by means of this knowledge to gain quick mastery of general problems that present themselves in various occupations. The courses should also include something of the customs, history, beliefs etc., of the country, to develop a sympathetic understanding of the people, and to enable one to avoid giving offense through ignorance of prejudices or superstitions.

The Turkish language is of Tartar origin, a member of Ural-Altaic family, dominated by the law of vowel harmony and agglutination. Turkish has admitted a large number of Arabic and Persian words, grammatical forms, and even entire sentences. It is best coordinated with the study of Arabic or Persian, from which languages the great bulk of its vast vocabulary is drawn. For this reason the study of Turkish presents unusual difficulties to anyone not acquainted with some oriental language, and for the same reason it should not be introduced too early in a college course. The course should be framed for graduate students, but should also be open to specially qualified students who have not completed the full college course and to those who have had considerable linguistic training.

The successful completion of the courses offered will normally occupy three years in the case of candidates for diplomatic service and two years for those who prepare for commercial or other foreign service. In each case two hours per week will be sufficient. After a preliminary survey of the grammar it is best to take up at once the reading of easy texts, the details of the grammar being explained as they are exemplified.

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Müller, August. Türkische grammatik. Mit Paradigmen, Litterature Chrestomathie und Glossar. (Classical.) Berlin, 1889.
Redhouse, *Sir* James W. A Turkish and English lexicon. Constantinople, 1890.
——— A lexicon, English and Turkish. London, 1861.
——— A simplified grammar of the Ottoman-Turkish language. London, 1884.
Thimm, C. A. Turkish self-taught. London, 1905.
With English phonetic pronunciation, containing vocabularies, elementary grammar, idiomatic phrases and conversations, English and Turkish dictionary, money, weights, and measures.
Tien, *Rev.* Anton. A Turkish grammar. London, 1896.

ARMENIAN.

The study of Armenian is made difficult by the alphabet, which closely resembles that of no other language, and by the fact that, although it is an Indo-

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in determining value. To reject for brevity, a correct procedure in other cases, becomes here arbitrary and unwise. For example, that an American chamber of commerce for Spain has begun active work may be the most important item in the "World's Markets" for June, while almost every article in successive issues of "The Americas," [3] although short and generally unsigned, could be used, as could each article in the department of international banking and finance of the "Bankers' Magazine." This applies to all the subjects except three, which touch the historical element in commerce, government, and law, and find their best treatment in books. Hence fact, recent and timely, seems the criterion for periodical valuation.

To recognize this makes clear the inadequacy of any bibliography of articles. It is inclusion, not selection, that is needed here, a continuous inclusion of all that may be useful (accompanied by a continuous rejection of what has passed its usefulness), continually collected, or, to use the librarian's technical word, cumulated, to date. No fixed list, however carefully approved at its printing, can do this. Daily its items become out of date, and their retention, which gives them a false importance, becomes an obstruction. Then, also, a really representative list would appall by the number of its items, although a short one chosen to show the sort of thing that may be found, and understood to be of intrinsic value only at the date of printing, may serve a useful purpose. Such a list we have prepared and appended.

There are two ways, one direct and one through bibliographic aids, that offer a feasible solution of how periodical literature may be used here to the best advantage. The first is the obvious one of seeing the magazines themselves. We give a selected list of the most suitable, slightly annotated and roughly classed. An arrangement of periodicals under the numerous headings chosen for the list of articles would, of course, mean frequent repetition of titles.

But the problem of inclusion may be more nearly solved, we believe, by supplementing direct use of periodicals with that of some such aid as is given in the Standard Daily Trade Service, published by the Standard Statistics Company, 47 West Street, New York City, at a subscription price of $120 a year. This is a combined digest and index to newspaper, periodical, and other sources of basic exporting information, supplying current news and forecasts in full. It consists of daily issues not exceeding 8 pages in length, for insertion in a loose-leaf binder, a monthly index whose every second issue covers the last two months; weekly tables and graphs of trade and financial figures of the United States for a period of 15 years. A personal service to subscribers is also furnished without additional cost.

This service gives full digests and excerpts of articles in newspapers, some 88 trade periodicals, and Government publications of the United States, Europe, Latin America, and the Far East; digests of legislative bills, proclamations, and other documents, and much direct information from its bureaus in Washington and Paris, the former keeping in such close touch with all governmental activity as to furnish within 24 hours data regarding legislation, court decisions, Federal Departments, boards and commissions, the Pan American Union, and similar organizations, and the latter supplying similar European information from two to four weeks earlier than it would otherwise reach the United States. French, Russian, Spanish, and Portuguese publications also are translated and digested. Subjects such as trade relations of countries, commercial products, export and import legislation and regulation, financial legislation and conditions, credits, international banking and exchange, foreign transportation facilities and projects, foreign commercial development,

[3] Publication now ceased.

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shipping, marine insurance, and patent laws and their interpretation, are treated in themselves and many of them also as subdivisions under country and locality.

It seems to us that this short cut to current foreign commercial information could be used to distinct advantage by instructors and students.

Also useful is the foreign trade section of the Prentice-Hall Business Digest Service, published by the Prentice-Hall Inc., 70 Fifth Ave., New York City; subscription, with quarterly cumulations, $30. This weekly digests all the articles of certain business periodicals and certain articles of more general magazines. This service is primarily an index-digest to periodical articles, while the Standard Daily Trade is primarily a news purveyor and forecaster.

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Arnold, Julean. Training Americans to know Asia. Commerce reports, No. 166, July 17, 1919. p. 354–59.

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Bevan, R. H. International education of world statesmen. Education, 40: 463–69, April, 1920.

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Cooper, C. S. Laying foreign trade foundations: What a few large corporations are doing in the way of training their employees for foreign trade. Export Trade and Exporters' Review, May, 1921, p. 5–8.

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DeHass, J. A. Commercial education for foreign trade: Fundamentals in foreign trade foreign trade education. National Foreign Trade Council. Official report, 1921, p. 47–78.

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McCrea, R. C. Commercial training for the consular service. Columbia University Quarterly, 21: 278–83, October, 1919.

MacElwee, R. S. Foreign trade education; a review of the progress along educational lines made during the past two years; School of foreign service at Georgetown University and what it has accomplished. World's Markets, March, 1921, p. 25–28.

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——— Vocational education for the business of exporting. *Also* Yanes, F. J. Education in relation to Pan-American trade. Pan-American Union. Pan-American Commerce, 1919, p. 368–73.

——— Vocational education for the business of exporting. Commerce reports, No. 118, May 20, 1919, p. 914–21.

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National Association of Corporation Training. Committee on Training for Foreign Commerce. Training for foreign commerce; with discussion. Proceedings, 1921, p. 242–322.

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Snider, G. E. Education for foreign trade. National Marine, 13: 23–25, June, 1919.

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Vocational training for foreign trade and shipping. Commerce reports, No. 10, Jan. 18, 1919, p. 161–63.

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Newspaper.

Journal of Commerce, daily. Published at 32 Broadway, N. Y. Subscription $15 (N. Y. City).

Banking, Credits and Exchange.

The Bankers Magazine, monthly. Published by the Bankers Pub. Co., N. Y. Subscription $5.
Runs a department on international banking and finance.
Credit Monthly. Published by the National Association of Credit Men, 41 Park Row, N. Y. Subscription $3.
The Commercial and Financial Chronicle, weekly. Published by Wm. B. Dana Co., N. Y. Subscription $10.
Economic World. Published by the Chronicle Co., 128 Water St., N. Y. Subscription $4.
Many useful short articles. Analyses of foreign commerce of the United States and many foreign countries.
Chase Economic Bulletin, irregular. Published by Chase National Bank, New York City.

Business Organization for Exporting.

Associated Advertising, monthly. Published by the Associated Advertising Clubs of the World, N. Y. Subscription $1.50.
Commerce Reports. Weekly organ of the Bureau of Foreign and Domestic Commerce. Dept. of Commerce. Obtainable from the Superintendent of Documents, Washington, D. C. Subscription $2.
The first source for exporting news; containing information mailed and cabled by our consuls, attachés, and agents abroad.
Exporter's Review, monthly. Published by Exporter's Encyclopedia Co., N. Y. Subscription $3.
Lists foreign trade opportunities.
Journal of Accountancy, monthly. Published by Journal of Accountancy, N. Y. Subscription $4.
Best accounting periodical.
Marine News, monthly. Published by N. Y. Marine News Co., N. Y. Subscription $3.
Gives a page or more to the news of each American port, shipyard information, marine insurance notes, and lists new maritime incorporations and ocean freights and charters.
The Nation's Business, monthly. Published by the Chamber of Commerce of the United States, Washington, D. C. Subscription $3.
Official magazine of the National Chamber of Commerce.
The Nautical Gazette, weekly. Published by the Nautical Gazette, 20 Vesey St., N. Y. Subscription $4.
An international newspaper. Page given to foreign trade and another to marine insurance. Port development. Short unsigned articles.
Printer's Ink, weekly. A journal for advertisers. Published by Printer's Ink Pub. Co., 185 Madison Ave., N. Y. Subscription $3.
Oldest and foremost of advertising magazines.
System. Published by A. W. Shaw Co., Chicago. Subscription $3.
Often the first to treat new subjects though generally in a cursory way.
The World's Markets, monthly. Published by R. G. Dun & Co., The Mercantile Agency, 290 Broadway, N. Y. $2.50.
A journal of information for all who are engaged in international trade.

Commercial and Financial Conditions in Foreign Countries.

Baltic Review, monthly. Published at 129A King's Road, Chelsea, London, S. W. 3. Subscription £1.
Board of Trade Journal and Commercial Gazette (English), weekly. Published by His Majesty's Stationary Office, Imperial House, Kingsway, London. 6d. per issue.
Divisions on customs regulations and tariff changes, domestic and foreign, Imperial and foreign trade, Government notices affecting trade, and trade statistics.
Bulletin of the Pan-American Union, monthly. Published by the Pan American Union, 17th and B Sts., NW., Washington, D. C. Subscription $2.50.
Commerce Monthly. Published by National Bank of Commerce, New York City. Free.
Eastern Commerce, monthly. Published at 25 Water St., Yokohama. Subscription $5.
Foreign Trade Bulletin, bimonthly. Issued by the Foreign Trade Bureau of the American Express Co., 65 Broadway, N. Y. Free on request.
A folder giving brief notes on regulations affecting shipping.
Japanese-American Commercial Weekly. Published at 414 8th Ave., New York City. Subscription $2.
Lloyds Bank Monthly; a survey of international trade conditions. Published at 71 Lombard St., E. C. 3 London.
Mexico, Financial and Commercial, semi-monthly. Published by Criterion Publishing Syndicate Inc., 15 Park Row, New York City. Subscription $2.
Poland, monthly. Published by American Polish Chamber of Commerce and Industry Inc., 953 Third Ave., New York City. Subscription $2.
Polish Economic Bulletin, monthly. Published by Sibunion Ltd., 128 Cannon St., E. C. 4 London. Subscription £1.

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Review of American Chamber of Commerce in France, Inc., semi-monthly. Published by American Chamber of Commerce in France, Inc., 32 Rue Taitbout, Paris. Subscription 25fr.

Russian Economic Bulletin. Published by American-Russian Chamber of Commerce, Woolworth Building, New York City. Subscription $1.

The South American: a journal for all interested in Latin American affairs, monthly. Published by The South American Pub. Co., 310 Lexington Ave., N. Y. Subscription $3.

The South American Journal and Brazil and River Plate Mail, weekly (English). Published at 309 Dashwood House, New Broad St., E. C. 2, London. 9d. the issue.

Standard Bank of South Africa, Ltd., monthly. Obtainable at 68 Wall St., New York City. Free.

The Statist, weekly. Published at 51 Cannon St., E. C. 4, London. 6d. the issue.

Swedish-American Trade Journal, monthly. Swedish-American Chamber of Commerce of the U. S. A., 2 Broadway, New York City. Subscription $1.

The Times: Imperial and Foreign Trade Supplement, monthly. Published by the Times, Printing House Sq., London, E. C. 4. Subscription 3s.

Trans-Pacific, monthly. Published by B. W. Fleisher, Tokyo. New York office, 1 W. 54th St. Subscription $6.

International Law and Economic Policies.

American Economic Review, monthly. Published by American Economic Association, St. Albans, Vt. Subscription $5.
Most valuable here for its section of abstracts from foreign and American periodicals arranged under subjects. Reviews new books and documents also by class.

American Journal of International Law. Published by the Oxford University Press 35 W. 32d St., N. Y. Subscription $5.
Quarterly numbers give bibliography of public documents relating to international law.

Annals of the American Academy of Political and Social Science. Published by the Academy of Political and Social Science, 39th St. and Woodland Ave., Phila. Subscription $5.
Articles in scholarly form treated at length by authorities.

International Law Notes, monthly. Published in London, obtainable from Baker, Voorhis & Co., N. Y. Subscription 9s. 6d.
Particularly full on private international law.

Journal of Political Economy, monthly. Published by the University of Chicago Press, Chicago. Subscription $4.

Millards Review of the Far East, weekly. Published by the Millard Pub. Co., 113 Avenue Edward VII, Shanghai, China. Subscription $10.
Covers commercial and political conditions.

North American Review, monthly. Published at 9 E. 37th St., N. Y. Subscription $5.

Political Science Quarterly. Published by the Academy of Political Science, Columbia University, N. Y. Subscription $5, including supplement.

World's Work, monthly. Published by Doubleday, Page & Co., Garden City, N. Y. Subscription $4.
Popular but accurate commercial, political, and economic news.

Industries, Geography, Commodities.

American Exporter, monthly. Published by American Exporter, N. Y. Subscription $3.
Devoted largely to American export commodities. Runs a page on office equipment. Also editions in Spanish, French, and Portuguese.

American Industries, monthly. Published for the National Association of Manufacturers, 30 Church St., N. Y. Subscription $1.
Not confined to the United States. Export trade and trade acceptances departments.

Asia, monthly. Published by the Asia Pub. Co., 627 Lexington Ave., N. Y. Subscription $3.50.
Journal of American Asiatic Association.

Commercial America, monthly. Published by the Philadelphia Commercial Museum for free circulation, mainly in Latin American countries, for the purpose of carrying to buyers reliable information concerning American manufacturers.
This museum, supported principally by public funds, is occupied solely in fostering closer commercial relations between the United States and other countries.

Dun's Review, international edition, monthly. Published by R. G. Dun & Co., the Mercantile Agency, 290 Broadway, N. Y. Subscription $3.
Illustrated articles on international industries only.

Export American Industries, monthly. Published for the National Association of Manufacturers, of which it is the organ, 30 Church St., N. Y. Subscription $3.

Geographical Review, quarterly. Published by the American Geographical Society, 15th St. and Broadway, N. Y. Subscription $5.
Reviews books, papers and magazine articles in its monthly numbers.

La Hacienda, monthly. Published at Buffalo, N. Y. Subscription $3.60. Revista mensual ilustrada sobre agricultura, ganaderia e industrias rurales.

Journal of Geography, monthly. Published at Menosha, Wisconsin. Subscription $1.
Elementary but suggestive articles on geographic and industrial subjects for teachers.

National Geographic Magazine, monthly. Published by the National Geographic Society, Washington, D. C. Subscription $3.50.

Statistics of Commerce.

International Crop Report and Agricultural Statistics, monthly. Published by the International Institution of Agriculture, Rome, Italy. Subscription 6 frs.
Agricultural and commercial statistics. Editions in English, French, German, Spanish, and Italian.

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Monthly Summary of Foreign Commerce of the United States. Published by the Dept. of Commerce, Bureau of Foreign and Domestic Commerce. Obtainable from the Superintendent of Documents, Washington, D. C. Subscription $1.50.

ARTICLES ON SUBJECTS NECESSARY TO TRAINING FOR FOREIGN TRADE SERVICE.

The periodical indexes to periodicals which will be found most useful in selecting current articles on the subjects used in training for foreign trade are the Readers Guide, International Index, Industrial Arts Index, Index to Legal Periodicals, and the Public Affairs Information Service—all published by the H. W. Wilson Co., 958 University Ave., New York City. The first four, arranged alphabetically by author, title, and subject, are issued monthly with occasional cumulations of from two to six months in one alphabet, and annual cumulated bound volumes. The P. A. I. S. is arranged alphabetically by subject only. It indexes pamphlets, papers and proceedings as well as periodical articles, and notes the founding of new associations and their publications. Weekly, bi-monthly and annual issues.

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DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

BULLETIN, 1921, No. 28

EDUCATIONAL SURVEY OF WHEELING, WEST VIRGINIA

A REPORT OF A SURVEY OF THE PUBLIC SCHOOLS OF THE INDEPENDENT SCHOOL DISTRICT OF WHEELING, WEST VIRGINIA, MADE AT THE REQUEST OF THE BOARD OF SCHOOL COMMISSIONERS, UNDER THE DIRECTION OF THE UNITED STATES COMMISSIONER OF EDUCATION

WASHINGTON
GOVERNMENT PRINTING OFFICE
1921

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LETTER OF DR. P. P. CLAXTON TO THE PRESIDENT OF THE WHEELING BOARD OF EDUCATION.

Hon. PAUL O. REYMANN,

President, Board of Education, Wheeling, W. Va.

MY DEAR MR. REYMANN: In accordance with the arrangement entered into with the Wheeling Board of Education, I have caused a careful study to be made of the public school system of your city, and have received preliminary reports from the members of the survey commission designated to do the field work.

As requested by you, I have had prepared a brief digest, or summary of the principal conclusions and recommendations, in order that these may be distributed in printed form to the members of your board and to others interested.

Accompanying this summary, I am sending also partial reports, or sections of the report, which present a portion of the supporting evidence and the argument for certain of the recommendations. I am making an effort to get as much as possible of the report into your hands in time for appropriate action in the emergency caused by the early termination of the recess taken by the West Virginia State Legislature.

I believe you have in the material presented herewith sufficient data to enable you to formulate your petition to the legislature. The remainder of the report I hope to place in your hands within the next two or three weeks.

Permit me to thank you and, through you, all the members of the board and the teaching staff for the hearty cooperation which all concerned have manifested toward the work of the survey, and to express the hope that the final result will be found in improved educational opportunities for the children and youth, as well as the maturer citizens of Wheeling, and increased utilization of these opportunities by all.

Very truly, yours,

P. P. CLAXTON,
Commissioner.

WASHINGTON, *March 10, 1921.*

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MEMBERS OF THE SURVEY COMMISSION.

The members of the commission appointed by the Commissioner of Education to make the survey of the public schools of Wheeling, and to report to him their findings and recommendations, are as follows:

From the Bureau of Education.

Dr. William T. Bawden, assistant to the commissioner, director of the survey.

Mrs. Henrietta W. Calvin, specialist in home economics.

Miss Nina C. Vandewalker, specialist in kindergarten and primary education.

Miss Florence C. Fox, specialist in educational systems.

Mrs. Alice Barrows Fernandez, specialist in industrial and economic relations in education.

Miss Julia B. Tappan, assistant in school hygiene.

From Outside the Bureau of Education.

Dr. J. Franklin Bobbitt, professor of educational administration, University of Chicago, Chicago, Ill.

Mr. Ralph Bowman, specialist in school finance and accounting, United States Bureau of Efficiency, Washington, D. C.

Dr. Willard S. Small, director of educational research and development, Interdepartmental Social Hygiene Board, Washington, D. C.

Dr. Chester A. Buckner, professor of secondary education, University of Pittsburgh, Pittsburgh, Pa.

Dr. Thomas Alexander, professor of elementary education, Peabody College for Teachers, Nashville, Tenn.

Dr. Fletcher B. Dresslar, specialist in school architecture, buildings, and grounds, Peabody College for Teachers, Nashville, Tenn.

Mr. Walter H. Klar, director art department, University of Pittsburgh, Pittsburgh, Pa.

Mr. Lynton F. Garrett, principal of the Training School, State Normal School, San Marcos, Tex.

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INTRODUCTION.

On December 17, 1920, the president of the board of school commissioners inquired concerning the possibility of having a survey of the public schools made under the direction of the United States Commissioner of Education. The conditions named were met by the board at a special meeting held on December 30, and an appropriation of $5,000 was made to cover the necessary expenses of the survey. The members of the survey commission, as indicated on the preceding page, were appointed by the Commissioner of Education, and the field work began on Monday, January 17.

The field work was completed on March 10; most of the work was done during February. The aggregate number of days devoted to field work was approximately 200.

On Thursday evening, March 10, the director of the survey made a report of the conclusions and recommendations at a special meeting of the board of school commissioners, and a digest of the report was given to the press for release on the morning of the 12th. On Friday evening the report was made public at a meeting of representatives of the board, various civic organizations, and the press through the distribution of a printed pamphlet of 53 pages.

THE SURVEY BUDGET.

The principal items of expenditure in connection with the survey may be summarized as follows:

Transportation and subsistence of members of the commission	$1,796.91
Honoraria of members of the commission not connected with the United States Bureau of Education	1,850.00
Materials used in educational tests	47.09
Clerical assistance	399.92
Printing preliminary report	348.00
Supplies, telephone, telegraph	80.52
Total, to April 5, 1921	4,522.44

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EDUCATIONAL SURVEY OF WHEELING, WEST VIRGINIA.

I. ORGANIZATION AND ADMINISTRATION OF THE SCHOOL SYSTEM.

INTRODUCTORY.

The independent school district of Wheeling was established by act of the Virginia Legislature, in Richmond, February 23, 1849. It was then, and has since been maintained, entirely independent of all other school corporations, general school legislation, and even of the municipal corporation of Wheeling—notwithstanding, at present, more than two-thirds of the area of Wheeling lies outside the independent school district.

Originally the board of school commissioners consisted of five members. Subsequent legislation to all intents and purposes divided the independent school district into seven relatively autonomous subdistricts, and provided for the present board of 21 members. In certain important respects this board functions as seven relatively independent local boards, and exercises executive control over such technical matters as appointment of teachers, administration of the school buildings, and the like.

A good type of personnel appears to have been attracted to the office; and the subdistricts have acquired a tradition of selecting high-minded men for their school commissioners. Certainly the present board is of this type. Some of the board's methods and actions must be criticized; but the errors to be pointed out are errors of judgment and not of character or effort.

Minutes of the board show that the superintendent of schools is not consulted nor asked to nominate teachers; until recently the principals were not consulted on appointments; nothing more clearly shows the primitive character of educational administration in Wheeling.

LACK OF COMMUNITY INTEREST AND SUPPORT A SERIOUS HANDICAP.

The community generally has been indifferent toward public school matters; active public cooperation and moral support have been largely lacking. Inactive members of the community who have made no effort to promote good schools have scarcely earned a right to criticize.

MANY COMMENDABLE FEATURES IN SPITE OF UNFAVORABLE CONDITIONS.

In spite of unfavorable conditions, including lack of vigorous community support, unwieldy size of board, inefficient scheme of organization, and the like, numerous commendable features have been introduced by the board. Some of these are:

(1) Medical inspection or health service.
(2) Numerous special supervisors and special teachers.
(3) Free textbooks.
(4) Development of the public library.

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(5) Recent large increases in salaries.
(6) Recent expansion of the budget.
(7) Setting standard qualifications for high-school teachers.
(8) An unusually extensive series of courses for vocational, industrial, commercial, and home-making training.
(9) Recent attempts to extend the benefits of physical training.
(10) The tendency to defray the expenses of members of the supervisory corps in attendance at professional meetings.
(11) Provision of visiting days for teachers.
(12) A not ungenerous sick-leave allowance.
(13) Provision of a "coach" teacher for each building (although the plan is not administered effectively).
(14) An unusually good system of providing substitute teachers (incomplete, but excellent so far as it goes).
(15) Numerous sets of supplementary readers, and a system for circulating them (in serious need of attention, but a highly commendable start).
(16) A teachers' pension system.
(17) Evening schools.
(18) Americanization classes.

DIFFICULTIES OF ADMINISTRATION THROUGH COMMITTEES.

The board has an unusually large number of standing committees—ten—each of which performs important functions properly belonging to the board itself. Four of these committees are each as large as the entire school board of New York City; and the smaller committees are each the size of the entire school board in Albany or Troy.

Adding these 10 functional boards to the seven local or subdistrict boards, and the composite board in which they all belong, one may realize something of the complexity of the organization and the possibilities for scattering responsibility.

For example, the committee on buildings and grounds acts chiefly as individuals, ordering repairs, painting, etc., without consultation, and without previous action by the board. The committee meets, confirms the acts of individual members, and then requests confirmation by the board. From the way in which reports are presented, the board can have no real knowledge of what is done; confirmation is practically invariable, and without debate.

In view of the amount of work to be done, members of the committee can not give the amount of time necessary to know all the details and needs of all the buildings. Each member knows many things about "his" building, it is true, but there is nothing approaching that specialized understanding of buildings, grounds, and equipment in relation to education that is needed for the efficient and economical administration of a modern school system. Further, they themselves sit among the judges of their own acts.

Evidence of a certain degree of irresponsibility is found in the use of business practices universally condemned, and generally forbidden by law; such as entering into contractual business relations with individual members of the board, and executive action by individual board members prior to directing action by the board.

The results of this system of lay administration may be seen in the actual building situation in Wheeling. Even old buildings can be made pleasant, light, airy, sanitary, and reasonably safe; but this has not been done. There is little evidence of careful planning, standardized procedure, settled policies, a forward-looking building program.

The board's task is not to *do* the work, but to *get it done;* first, by directing, and then by inspecting, so as to be sure the work is efficient and economical.

The committee on buildings and grounds is active and conscientious, and appears to give an unusually large amount of time and attention to executive labors. It is not a question of honesty, or integrity, but of incorrect organization and procedure for securing results.

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IMPOSSIBLE FOR LAYMEN EFFECTIVELY TO EXAMINE AND SELECT TEACHERS.

The activities of the committee on teachers and schools afford other examples of the difficulties involved in the attempt to perform expert executive functions through committees or individual members of the board. Without professional training and extended experience, it is not possible to judge efficiently the relative merits of candidates for principalship and teaching positions. In actual practice, the scheme has worked badly, omitting entirely any provision for rating the efficiency of principals and teachers, and means for eliminating the inefficient; another serious omission is that of a rule requiring consultation with superintendent and principals in choosing teachers. No provision has been made for recognizing superior merit or professional advancement by increases in salary or otherwise.

The alternative plan is to leave executive labors to professional executives. The superintendent alone, in consultation with principals and supervisors, can know how many teachers are needed, and the special abilities needed for each type of position. This plan places responsibility where it belongs; relieves the board of unnecessary labors; gives the superintendent authority over his teachers, which he can not have so long as they owe their positions to others; permits the board to hold the superintendent responsible for results—a thing impossible now.

WORK OF OTHER COMMITTEES DISCUSSED.

The report discusses in detail the activities of all the standing committees of the board, and shows clearly what functions properly belong to the board and what duties should be performed by executive officers under the direction of the board. It is impossible in this brief digest to devote space to each.

LACK OF AN EXECUTIVE HEAD A SERIOUS DEFECT.

To summarize the situation, perhaps rather bluntly, the fundamental weakness in the public school system in Wheeling has been executive management by laymen. There are many analogies between the management of a school system by a board of education and the management of a business or a factory by a board of directors; but the fundamental principles of organization and management generally accepted in business and industry, and in progressive school systems, have not been operative in the Wheeling schools.

The board of directors of a business or manufacturing corporation does not mix in the details of the work. It employs a chief executive, outlines its policies to him, makes clear to him the results to be secured, gives him control over the means to be employed, and then demands that he get results. They then employ various methods of accounting, auditing, and otherwise checking up the results.

In the Wheeling schools, however, the executive work of the board is mainly performed by committees, or even by individual members, who buy and sell, employ and discharge, enter into and abrogate contracts, direct employees, and attend to countless details usually left to executives and their subordinates. In the sense in which the term is used in the business world, the board has no chief executive, and there is little evidence in the plan of organization to show any realization of the need of one.

Let the business man on the board imagine what would happen to his bank, or store, or factory, if it were managed by a committee of outsiders who dipped into the business for, say, two hours each week. The conduct of a big school system is a more complex, difficult, and technical job than merchandising or banking.

What is needed is the adoption of a plan by which the board will get things done in responsible ways, and enforce responsibility, without doing the things themselves.

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The board should occupy itself mainly with directorial and inspectorial functions, leaving detailed executive labors to their specialized and experienced executive officials—the superintendent of schools and his subordinates.

FUNDAMENTAL NEEDS IN WHEELING.

Briefly stated, some of the things which need to be done are:

(1) Eliminate the subdistricts, except for attendance purposes.

(2) Eliminate the local commissionerships, and have board members elected at large.

(3) Provide a small board of men and women who will be beyond the reach of local, petty, personal, and political influences.

(4) The board should delegate responsibility and authority to its chief executive, provide the necessary means, demand results, and then stand aside and let the superintendent and his organization get results.

(5) The board should adopt impersonal ways of checking up results, efficiency, and economy.

(6) The board should take the community into its confidence fully, at all times, and keep the public informed as to policies, needs, and results.

NEW LEGISLATION ESSENTIAL.

The laws governing the independent school district of Wheeling are in a confused, fragmentary, and archaic condition. The complete charter legislation which governs the district is not in the possession of the board, nor any of its officers, nor of the public library which is under the control of the board.

The school laws applicable to Wheeling should be completely rewritten on the basis of the best modern practice. The report contains detailed suggestions concerning those matters which should be included in State legislatures, and also those which should be cared for by rules and regulations or other local legislation by the board.

II. THE LEGISLATIVE PROGRAM.

There is a commendable tendency in progressive States to eliminate special charter legislation for independent city school districts. When the State drafts a good general law for the purpose, it saves a city a good deal of special maneuvering simply to come in under it.

If Wheeling does not choose to follow this course, it is recommended that, in rewriting the charter, the general State legislation be accepted so far as it is suited to conditions in Wheeling, and that special legislation be sought only in so far as the general legislation is not suitable.

NECESSARY DISTINCTION BETWEEN STATE LEGISLATION AND THE RULES AND REGULATIONS OF THE BOARD.

Only the more general and fundamental things should be accomplished by State legislation. Matters of detail should be left to the by-laws, rules and regulations, and other legislation by the board.

In the following summary of the things to be taken care of in the proposed reorganization of the affairs of the independent school district of Wheeling, those matters which are usually best taken care of by *State legislation* are designated by the letter (S); and those which are best included under the *rules and regulations* or other legislation of the board are designated by the letter (R)

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SUMMARY OF POINTS TO BE COVERED.

(1) The subdistrict divisions should be abolished, except for attendance purposes. (S)

(2) There should be a school board of five members, elected at large, one member being elected each year, for a term of five years. (If elections must be biennial, then the term should be six years, one-third of the board, as nearly as may be, being elected at each election.) (S)

(3) It is desirable, though not so essential, that members be nominated by petition and elected on nonpartisan ballot, at special school elections, held in the school buildings, and directed by the board of education. (S)

(4) Board members should be citizens of the United States, and residents of the city for at least three years immediately preceding election. (S)

(5) No salary or other remuneration should be paid to board members. This does not preclude the payment of traveling and other necessary expenses involved in the conduct of the board's business. (S)

(6) When a vacancy occurs other than by expiration of term of office, it should be filled by the mayor (subject to confirmation by the council) until the next school election, when it should be filled by election for the unexpired portion of the term. (S)

(7) A specific day and hour should be fixed for the first meeting of the board subsequent to the annual election, at which time the board is organized for the year. (S)

(8) A specific day and hour should be fixed for the regular monthly board meetings, and a method prescribed for calling special meetings. (R)

(9) The board should have no standing committees except the committee of the whole. (R)

(10) When tasks arise demanding committee work, the board should appoint temporary special committees. (R)

(11) The superintendent of education should be made the chief executive of the board of education in its administration of all aspects of the school system. (S)

(12) The board should appoint the superintendent for a relatively long term of three or four years, subject to removal only for cause by a four-fifths vote of the board. (S)

(13) In Wheeling the board should create (if not already created) and provide for the following positions subordinate to the chief executive: (1) Business assistant (who also should be clerk of the board); (2) manager of properties (or director of buildings and grounds), subordinate to the business assistant; (3) director of census and attendance; (4) director of health (including both medical inspection and physical education), (5) primary supervisor. Beyond these, the present provision of special supervisors, principals, teachers, nurses, etc., appears to be good. (R) (By-laws.)

(14) Outside of the major executive organization the board should provide for and appoint for only part-time or occasional duties an attorney, a treasurer, and an auditor. (R) (By-laws.)

POWERS AND DUTIES OF THE BOARD.

(15) The board should possess corporate powers: The power to acquire, hold, lease, and sell real and personal property; to receive bequests and donations; to sue and be sued; to condemn property needed for educational purposes; and to perform other corporate acts required for the management and control of the schools and other agencies committed to its care. (S)

(16) The powers and duties of the board of education should be:

(*a*) To determine all questions of general policy to be employed in the conduct of education. (S)

(*b*) To create, abolish, modify, and maintain such positions, schools, divisions, classifications, etc., as may be necessary for the efficient administration of the work. (S)

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(c) To have the care, custody, title, control, and safekeeping of all school property or other property of the city used for educational, social, or recreational activities and not specifically placed by law under the control of some other body or officer, and to prescribe rules and regulations for the use and preservation of such property. (S)

(d) To purchase new school sites or additions to sites, and to order new buildings or additions to buildings erected, as the needs of the schools and other educational, social, and recreational agencies under their control may necessitate; and to approve all contracts entered into. (S)

(e) To rent or lease property required for the use of schools or other agencies maintained and directed by the board. (S)

(f) To establish and maintain such free elementary schools, intermediate schools, high schools, kindergartens, vocational and industrial schools, technical schools, night schools, part-time or continuation schools and classes, vacation schools, open-air schools, schools for adults, schools for delinquents, schools for mentally and physically defective children, or such other schools or classes as the board shall deem necessary to meet the needs and demands of the city. (S)

(g) To establish and maintain libraries and museums which may be open to the public, to organize and maintain public lecture courses, and to establish, equip, and maintain play grounds, recreation centers, social centers, and reading rooms. (S)

(h) To authorize the formulation of the annual budget of expenditures for the schools, public library, and other agencies maintained by the board, and to pass upon and adopt such budget as the work appears to necessitate. (S)

(i) To fix the annual tax levy for education. (S)

(j) To fix the salaries of all officers and employees. (S)

(k) To approve all expenditures made. (S)

(l) To approve all contracts entered into. (S)

(m) To authorize the formulation of the by-laws, rules, and regulations needed for the direction and management of the schools and other agencies and activities under the board, and to approve such by-laws, rules, and regulations before they become operative. (S)

(n) To authorize the courses of study which shall be given in the schools or by other educational agencies directed and maintained by the board, and to approve the content of such courses before they become operative. (S)

(o) To authorize the selection and determination of such books, maps, globes, apparatus, furniture, tools, and other equipment and supplies as may be necessary for the proper and efficient management of the schools and other educational, social, and recreational agencies and activities under its management and control, and to approve such selections and determinations before purchases are made. (S)

(p) To authorize the purchase and provision of such books, maps, globes, apparatus, furniture, tools, and other equipment and supplies as may be necessary for the proper and efficient management of the schools and other educational, social, and recreational agencies and activities under its management and control, and to approve prices and other conditions of purchase, before such purchases are made. (S)

(q) To select and employ a superintendent of education, who shall be the chief executive of the board. (S)

(r) To authorize the determination of the number and qualifications of employees to be provided for the work of the several schools and agencies, and to approve such determinations before employees are selected. (S)

(s) To authorize the establishment of an efficient system of certification of teachers, and the preparation of eligible lists. (S)

(t) To require the superintendent to nominate all assistants, directors, and supervisors of special departments, principals, teachers, physicians, nurses, janitors, and other officers and employees in the organization under his charge; the board to pass upon and approve all nominations before appointments are made, and to make all appointments and approve all contracts. (S)

(u) To authorize the determination of plans for attendance, census, classification, grading, promotion, transfers, graduation from schools and courses, and other matters involved in the management and control of the pupils and students, and to approve all such plans before they become operative. (S)

(v) To authorize the determination of plans for testing, recording and reporting the degrees of proficiency attained by the pupils in the several classes, grades, and schools; approve such plans before they are put into operation; and to provide the means necessary for making the plans operative. (S)

(w) To authorize the preparation and publication periodically of reports to the community which set forth in a clear and intelligible manner the character of the efforts, degrees of achievement, working conditions, finance, and further needs of the

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schools and other agencies maintained and directed by the board; to approve such reports before they are published; and to direct their publication and distribution. (S)

(*x*) To require their officials to make such reports of the educational and other activities under their charge as may be legitimately requested by county, State, or national authority. (S)

(*y*) To perform any duty imposed upon boards of education by the laws or administrative regulations of the State so far as they may be applicable to the schools or other educational agencies and affairs of the district and not inconsistent with other legislation affecting the district. (S)

(*z*) To prescribe such by-laws, rules, and regulations as may be necessary to make the State legislation effective, and for the conduct of the proceedings of the board, and for transacting all the affairs of the board that relate to the management, operation, control, maintenance, and discipline of the schools, public library, and all other educational, social, and recreational agencies and activities under its charge or direction. (S)

(*aa*) To perform such other duties and to possess such other powers as may be required to administer the affairs placed under its control and management, to execute all powers vested in it, and to promote the best interests of the schools and other agencies and activities committed to its care. (S)

POWERS AND DUTIES OF THE SUPERINTENDENT.

(17) The superintendent of schools should possess the following powers and be charged with the following duties:

(*a*) To serve as the chief executive officer of the board in its conduct of the schools and of other agencies and activities committed to its care. (S)

(*b*) To attend all regular and special meetings of the board, and to cooperate and advise with all committees of the board. (S)

(*c*) To exercise the right to speak on all matters before the board, but not to vote. (S)

(*d*) To enforce all provisions of law and all rules and regulations relating to the management of the schools and other educational, social, and recreational agencies and activities under the direction of the board of education. (S)

(*e*) To prepare and submit to the board for approval by-laws, rules, and regulations needed for the direction and control of the schools and other agencies and activities under the charge of the board. (S)

(*f*) To prepare, in conference and cooperation with the directors and supervisors of special departments, principals, teachers, librarians, and other competent members of the organization, the content of each course of study authorized by the board of education. (S)

(*g*) To select, in conference and cooperation with the directors and supervisors of special departments, principals, teachers, librarians, physicians and nurses the textbooks and other books, apparatus, maps, charts, tools, equipment, and all other supplies and appliances needed for the activities of the schools and other agencies under the care of the board. (S)

(*h*) To determine the boundaries of school attendance subdistricts, subject to the approval of the board. (S)

(*i*) To investigate the need of and recommend to the board provision for school facilities in the several subdistricts. (S)

(*j*) To have charge of the operation and maintenance of the buildings and equipment of the schools and other agencies under the board, the maintenance of grounds, and the purchase, storage, and distribution of books, maps, charts, apparatus, tools, and all other equipment, materials, and supplies. (S)

(*k*) To have charge of the system of certification of all teachers and other employees, except as otherwise provided for by law, and to prepare, as occasion demands, eligible lists for all types of positions. (S)

(*l*) To nominate as needed the assistants, directors and supervisors of special departments, principals, teachers, physicians, nurses, librarians, janitors, clerks, stenographers, and other employees authorized by the board. (S)

(*m*) To recommend, subject to the approval of the board, the salary to be paid each official or employee of the board. (S)

(*n*) To have supervision and direction of assistants directors, and supervisors of special departments, principals, teachers, librarians, physicians, nurses, attendance officers, janitors, and other persons employed in the conduct of the schools and other agencies under the board. (S)

(*o*) To assign principals, nurses, janitors, librarians, and other employees to the schools or other place where their work is to be done; to transfer them from one school

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or other place of work to another; and to report immediately such transfers to the board for consideration and action. (S)

(*p*) To assign teachers to schools, grades, classes, and courses according to the needs of the service; to transfer teachers from one school to another, from one grade to another, from one class to another, according to the needs of the service; and to report immediately such assignments and transfers to the board for its consideration and action. (S)

(*q*) To report to the board violations of regulations and cases of insubordination; and in cases sufficiently grave to warrant it, suspend any official or employee under the direction of the superintendent until the next regular meeting of the board when all the facts relating to the case shall be submitted to the board for its consideration and action. (S)

(*r*) To recommend for discharge or retirement any employee under his direction whose influence or services are so unsatisfactory as to warrant such action, subject to the approval of the board. (S)

(*s*) To prepare, in conference with the business assistant and others in possession of the necessary facts, an annual budget, showing in detail the appropriations necessary to meet the estimated needs of the ensuing school year, and submit the same to the board for consideration and action. (S)

(*t*) To recommend to the board transfers from one budgetary appropriation to another as conditions may require. (S)

(*u*) To have power, within the limits of the detailed budget approved by the board, to approve and direct all purchases and expenditures, making report to the board at each monthly meeting, and at any other time when the board may request it; to report proposed detailed expenditures prior to action, whenever the board may request the same, for its consideration and action. (S)

(*v*) To have supervision and direction over all activities involved in the census, the enforcement of the attendance laws, the classification, grading, promotion, discipline, and the organization and management in general of the pupils and students.

(*w*) To have supervision and direction over courses of study, methods of educational procedure, the working conditions of pupils and teachers, standards of achievement, the supervisory labors of special supervisors, principals, and departmental heads, the training of teachers in service, the measurement of educational achievements, and every other professional factor, agency, or activity involved in the efficient conduct of education. (S)

(*x*) To make decisions in the case of controversies or conflicts arising in the administrative organization of which he is the head, subject to appeal to the board. (S)

(*y*) To decide all matters of detail purely ministerial and administrative in the application of laws, by-laws, rules, and regulations to the concrete situations that are met with; and to decide any matters that may arise concerning which no specific provision is made in the legislation, reporting his decisions at the next regular meeting of the board following such decisions. (S)

THE BUSINESS ASSISTANT AND CLERK OF THE BOARD.

(18) The business assistant to the superintendent and clerk of the board, before entering upon the duties of his office, should execute a bond in such sum as directed by the board, conditioned upon the faithful discharge of his official duties, and delivery to his successor of all district property pertaining to his office or in his custody.

(19) The business assistant, under the supervision and direction of the superintendent, should perform the following duties:

(*a*) Act as purchasing agent, receive, store, and distribute the books, supplies, apparatus, and other materials and appliances authorized by the board. (R)

(*b*) Represent the board in negotiations relating to the construction, repair, and maintenance of school property. (R)

(*c*) Recommend to the board through the superintendent such assistants, clerks, janitors, engineers, foremen, and mechanics as shall be needed for continuous employ in the department under his charge; and have authority to employ for brief periods such workmen as are necessary for the execution of the labors of his department, and to discharge the same. (R)

(*d*) Supervise all matters of repair, and have general charge of all buildings under the charge of the board. (R)

(*e*) Make and keep accurate and reliable real and personal property records which shall show the cost, time of purchase or acquisition, present value, and location of the property. (R)

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(*f*) Cause the property of the board to be insured in such amounts as the board may from time to time direct, and keep a record of insurance placed on school property. (R)

(*g*) Make to the board through the superintendent written monthly report of the condition of the buildings and other property of the board, as to repairs, construction, and improvements, including such requests of principals as require action of the board, with recommendations thereon. (R)

(*h*) Draw up or examine all contracts and other engagements in which the board is a party. (R)

(*i*) Receive tuition fees, fines, money from the sale of books, shop construction, and other school property and services, from other buildings, and from other sources, except such as are paid to the treasurer of the board according to law, and deposit all moneys collected by him with the district treasurer at least once each month. (R)

(*j*) Audit all claims, approve all bills, and submit the same to the auditor of the board for audit and approval. (R)

(*k*) Audit all cash collections made by the agents of the board, and determine the kind of form of reports to be required of such collecting agents. (R)

(*l*) Keep the revenue and expense accounts, asset and liability accounts, budget allowance ledger, registers of purchase orders, vouchers and warrants, expenditure distribution record by schools, pay-roll records, registers of leases; rents, bonds, and building construction, and other contracts. (R)

(*m*) Draw all warrants in payments of claims against the board. (R)

(*n*) Submit to the board a monthly report of receipts, disbursements, and budget balances, and an annual report at the close of the fiscal year. (R)

(*o*) Act as custodian of all contracts, securities, documents, title papers, books of record, and other papers belonging to the board. (R)

(*p*) Have supervision and direction over the director of properties, janitors, and other continuous or temporary employees of the department under his charge. (R)

(*q*) Perform such other duties as may be assigned by the superintendent under the authorization of the board. (R)

(20) The business assistant, in his capacity of clerk of the board, should perform the following duties:

(*a*) Perform the usual functions of secretary to the board. (R)

(*b*) Keep the minutes of the meetings of the board, and a calendar of all matters referred to committees and others, and report action or nonaction on the same at each regular meeting. (R)

(*c*) Send written notices to board members of both special and regular meetings of the board, with calendar of all matters to be brought before the meeting so far as these are known at time of sending the notice. (R)

(*d*) Receive and reply to all communications to the board according to the directions of the board. (R)

(*e*) Perform such duties as are prescribed by law or by the by-laws of the board in connection with school elections of every kind. (R)

The legislation above suggested will provide for good organization and procedure upon the administrative level of the management. It is not possible here to enter into a full enumeration of all the laws, by-laws, rules, and regulations that should be enacted for the governance of the schools. The things to be provided for are very numerous and can be ascertained by an examination of the complete school code of West Virginia, or other States, together with an examination of manuals of rules and regulations of careful school boards.

MEETINGS OF THE BOARD.

One way of estimating the efficiency of the board is to note the regularity with which the members attend the meetings. For this purpose an examination was made of the minutes of the board, and the attendance noted during the three years from January 1, 1918, to December 31, 1920.

During this period, the board held 37 regular meetings, 9 special meetings, 1 adjourned meeting, and 7 meetings at which there was no quorum; total, 54 meetings.

Sixteen members have been connected with the board for the entire three years; of these, 1 member attended all of the 54 meetings; 1 attended 53, and 1 attended 51;

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only 9 others attended more than 22 meetings. One member has attended but one meeting of the board in three years.

In 1918, when 16 meetings were held, 7 members attended only 8 meetings or less; in 1919, when 21 meetings were held, 8 members attended only 10 meetings or less; in 1920, when 17 meetings were held, 8 members attended only 8 meetings or less.

The following table shows the number of meetings held during the three years, and the number of members present at each:

TABLE 1.—*Attendance of members at meetings of the board of education.*

Number of members present.	Number of meetings.			Three years' total.	Aggregate attendance.
	1918	1919	1920		
18	1			1	18
17		3		3	51
16	1	1	2	4	64
15	2	3	4	9	135
14	3	2	3	8	112
13	2	3	4	9	117
12	3	3	2	8	96
11	2	2	1	5	55
10		2		2	20
9	2	1	1	4	36
8					
7		1		1	7
Total	16	21	17	54	771
Per cent of attendance	61.9	61.9	64.4	62.7	

Of the 54 meetings held during the three years, 7 had fewer than 11 members present, or a quorum; at only 8 meetings were there more than 15 members present; only 1 meeting was attended by as many as 18 members. The per cent of attendance of members for the 3-year period was 62.7. In this connection, it may be noted that the board requires 75 per cent performance from the children in the schools as a condition of promotion.

SCHOOL CENSUS.

A school census is taken annually in Wheeling, but it does not appear that the board makes any special use of the data thus secured, for no analysis has been made of the figures. Further, the work of enumeration is very carelessly done, and the reports are quite unreliable.

For example, an analysis of the 1920 school census figures was made by the survey staff, in order to ascertain how many children were reported of each age. A comparison of these figures with the figures for enrollment in nine public elementary schools and six parochial schools shows that there are enrolled in these schools 949 more children under 14 years of age than are accounted for in the census reports. Again, an analysis of the 1915 census enumeration was made, for comparison with corresponding figures of five years later. The total number of white children reported was 10,315; of these, the ages are not given in 2,182 cases, or more than 20 per cent of all. Of 238 colored children, the ages are not reported in 118 cases, or nearly 50 per cent of all.

Such reports are practically valueless, and payment for them is a waste of public money.

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TABLE 2.—*Comparison of school census with school enrollment, 1920—Number of children reported of each age.*

Age in years.	Census enumeration, May, 1920.	Enrolled in—		Not in elementary schools.	Excess.
		9 public elementary schools, September, 1920.	6 parochial schools September, 1920.		
Under 6	3	114	26	.....	137
6 to 6.5	7	259	87	.....	339
6.5 to 7	248	228	61	.....	41
7 to 7.5	383	249	124	10	.....
7.5 to 8	339	239	99	1	.....
8 to 8.5	322	245	128	.....	51
8.5 to 9	288	228	100	.....	40
9 to 9.5	326	259	110	.....	43
9.5 to 10	407	235	104	68	.....
10 to 10.5	339	270	89	.....	20
10.5 to 11	320	251	88	.....	19
11 to 11.5	320	272	147	.....	99
11.5 to 12	285	262	46	.....	23
12 to 12.5	322	295	126	.....	99
12.5 to 13	341	249	74	18	.....
13 to 13.5	332	245	108	.....	21
13.5 to 14	318	263	72	.....	17
14 to 14.5	344	203	59	82	.....
14.5 to 15	296	102	39	155	.....
15 to 15.5	337	67	24	246	.....
15.5 to 16	258	37	16	205	.....
16 to 16.5	354	9	7	338	.....
16.5 to 17	303	11	7	285	.....
17 to 17.5	294	1	.....	293	.....
17.5 to 18	294	1	.....	293	.....
18 to 18.5	336	.....	.....	336	.....
18.5 to 19	319	.....	.....	319	.....
19 to 19.5	327	.....	.....	327	.....
19.5 to 20	233	.....	.....	233	.....
20 to 20.5	254	.....	.....	254	.....
20.5 to 21	340	.....	.....	340	.....
Over 21	450	.....	.....	450	.....
Not reported	26	.....	.....	26	.....
Total	9,665	4,594	1,741	4,279 949	949
				3,330	

School census figures should be checked up more carefully to insure accuracy and completeness, and then they should be carefully analyzed and studied with a view to placing the facts before the board. These facts should include the number of children of each age who ought to be in school; where they live; how many are actually enrolled in public, private, or parochial schools; how many are working at gainful employment; other reasons for nonattendance at school.

Progressive communities are now supplementing the formal census enumeration by providing for cumulative record cards, to be made and kept up to date by the attendance department. The card contains information concerning residence, names and birth places of parents, date of birth of child, sex, nationality, kind and grade of school attendance or reason for nonattendance; name and address of employer and nature of employment if employed, etc. If such cards are kept up to date by the addition of names of children moving into the community the essential facts about every child of school age can be available at all times.

Early in each school term the census reports should be checked against the enrollment in the public, private, and parochial schools to ascertain what children are out of school. The attendance officers can then visit the homes of these children and follow them up. Census information, when properly digested and utilized, will thus function more completely in the administration of compulsory school attendance,

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child labor legislation, and the granting of work permits. It will also prove valuable in studying the growth of the community and the shifting of population, and thus assist in planning school accommodations for the future.

III. FINANCES AND ACCOUNTING.

COMPARISON OF CITY SCHOOL EXPENDITURES WITH THOSE OF CITY DEPARTMENTS.

(*a*) City government enjoys the advantage of having the various city revenues to meet part of city expenses; whereas the schools must levy a tax for almost their entire expenditures. Therefore the tax rates of city and schools are not comparable, nor are they comparable with tax rates of other cities not organized in like manner.

(*b*) Comparison between city departments and schools should be made only on basis of expenditures. Of the total amount expended by both city and schools from 1917–18 to date the schools alone have expended but 35 per cent; schools and library together, 36½ per cent.

(*c*) School costs in Wheeling have doubled since 1915, but this is true also of schools throughout the country. Increase in teachers' salaries and increase in other costs, together with additional school activities, are responsible for increase in 1920 school tax.

(*d*) Other public expenditures in Wheeling have increased in even greater proportion than the schools. Since 1917 the expense of the city council has increased 224 per cent; bureau of streets, 144 per cent; bureau of fire, 142 per cent; bureau of police, 98 per cent; bond principal and interest, 95 per cent; bureau of health, 57 per cent; whereas the school expenditures have increased but 55 per cent. (See Table 1.)

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TABLE 3.--*Joint statement of city department, public school, and library expenditures for 1917–18, 1918–19, 1919–20, and estimated expenditures for 1920–21, Wheeling, W. Va.*

Departments and activities.	1917-18		1918-19		1919-20		1920-21		Total.	
	Amounts.	Per cent.	Amounts.	Per cent.	Amounts.	Per cent.	Amounts. [1]	Per cent.	Amounts.	Per cent.
Bond principal and interest	$84,220.96	9.2	$99,410.60	9.7	$84,886.00	7.2	$163,826.95	10.8	$432,344.51	9.4
City council and clerk	5,336.86	.6	13,815.45	1.3	10,236.51	.9	17,283.00	1.1	46,671.82	1.0
City manager and staff	46,174.65	5.0	38,262.97	3.7	47,677.03	4.1	55,452.36	3.6	187,567.01	4.0
Waterworks	115,992.67	12.7	136,439.01	13.2	110,767.30	9.4	134,159.16	8.8	497,358.14	10.7
Bureau of fire	81,179.34	8.8	95,637.45	9.3	175,930.67	15.0	195,641.62	12.9	548,389.08	11.8
Bureau of police	65,619.30	7.1	74,067.00	7.2	94,117.33	8.0	130,152.32	8.5	363,955.95	7.8
Bureau of streets	46,296.17	5.0	47,526.21	4.6	56,930.74	4.8	113,236.49	7.4	263,989.61	5.7
Electric light works	39,111.85	4.3	31,413.96	3.0	22,707.59	1.9	35,653.93	2.3	128,887.33	2.8
Bureau of health	37,145.04	4.0	50,151.16	4.9	39,318.71	3.3	58,400.00	3.8	185,014.91	4.0
Markets	2,894.80	.3	3,302.68	.3	2,954.63	.3	3,150.00	.2	12,302.11	.3
Wharves	371.25	.....	402.29	.....	400.33	.....	1,410.00	.1	2,583.87	.....
City's share in cost of special improvements [2]	5,416.92	.6	.....	.....	54,213.43	4.6	[3] 30,000.00	2.0	89,630.35	1.9
Miscellaneous	34,718.96	3.8	78,058.78	7.6	41,733.95	3.5	50,000.00	3.3	204,511.69	4.4
Total of city departments	564,478.77	61.4	668,487.56	64.8	741,874.22	63.0	988,365.83	64.8	2,963,206.38	63.8
Library	17,199.42	1.9	12,380.79	1.2	12,080.58	1.0	12,500.00	.8	54,160.79	1.2
Total of city departments and library	581,678.19	63.3	680,868.35	66.0	753,954.80	64.0	1,000,865.83	65.6	3,017,367.17	65.0
Public schools (independent school district)	337,831.25	36.7	348,906.44	34.0	421,227.38	36.0	523,239.64	34.4	1,631,204.71	35.0
Grand total	919,509.44	100.0	1,029,774.79	100.0	1,175,182.18	100.0	1,524,105.47	.....	4,648,571.88	100.0

[1] Estimated; amount taken from budget estimates.
[2] Street paving, sewers, etc.
[3] Arbitrary estimate, as this item does not appear in the budget; the estimate is probably lower than the actual amount.

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(*e*) City of Wheeling includes more taxable property than the independent school district; therefore city can raise as much money by a smaller tax rate as the schools can by a larger tax rate.

(*f*) Comparison between tax rates of 1919 and 1920 show school tax rate to have increased 54 per cent, and city tax (based on equal amount of taxable property to have increased 50 per cent.

(*g*) Conclusion to be drawn from the above is that school tax of 86 cents in 1920 is logical and in line with what other cities are doing for their schools.

COMPARISON OF WHEELING SCHOOL EXPENDITURES WITH THOSE OF OTHER CITIES.

(*a*) The taxable wealth in the independent school district of Wheeling for 1920 is $65,404,955.[1] But a study of school taxation by 45 cities of 30,000 to 100,000 population in 1917–18 reveals the fact that Wheeling was considered as not assessing property on a 100 per cent valuation, and if so taxed its taxable wealth in 1917 would be $93,534,000 instead of $62,893,115 as given.

(*b*) In comparison with the same 45 cities, Wheeling ranks 33 as to total school expenses (excluding additions and improvements); it ranks 38 in expenses for general control; 32 in instruction cost (day school); 34 in cost of plant operation; 29 as to expenses for auxiliary agencies; and 26 fixed charges and interest.

(*c*) Wheeling's cost in 1919–20 per pupil average daily attendance as to total school expenses is $76.69; for general control, $3.16; for instruction (day school), $54.13; operation of plant, $7.34; upkeep, $7.16; auxiliary agencies, $2.26; fixed charges and interest, $2.64.

THE ACCOUNTS OF THE WHEELING PUBLIC SCHOOLS.

(*a*) The public schools of Wheeling unfortunately, like numerous other school systems of the country, maintain no accounting system in the technical sense of the word. By this is meant a double-entry set of books from which balance sheets, operating, and other analytical statements may be currently drawn.

(*b*) The school accounts of Wheeling consist of a voluminous record of receipts and disbursements, a portion of which is duplication, with but little separation as to character of expenditure, and mixed up as to distribution of functional costs. There appears to be a misunderstanding as to which funds are the proper ones to make certain charges against and have the charges legal. Instances exist where abatements of expenditures are shown as revenues; and also the opposite, where abatements of revenues are shown as expenditures. Expenditures pertaining to different school years are not clearly segregated. Expenditures, such as repairs and improvements, are grouped together, although one is expense and the other investment.

(*c*) The annual financial statements of the schools are to be criticized as masses of undigested data, giving little information to the public, and of practically no value for administrative review.

(*d*) The method of filing is antiquated and the filing apparatus obsolete.

(*e*) As for the store records, it would be unfair to say that there are none, inasmuch as memoranda totals of quantities are occasionally made; but, nevertheless, the requisitions on which books and supplies are delivered from the storeroom are not priced nor extended and are therefore not recorded in any financially usable form.

(*f*) The schools are doing a business of from $300,000 to $400,000 (in 1919–20 it reached $500,000; in 1920–21, $619,425.36), but the accounting staff consists of one man who acts as clerk of the board, bookkeeper, cashier, paymaster, filing clerk, purchasing agent, and storekeeper. The only assistance he has is a portion of the services of a stenographer, who acts also in like capacity for the superintendent of schools.

[1] Including public utilities, $72,026,205.

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(*g*) Inquiry develops the fact that it has not been the policy of the board to authorize, or the clerk to request, attendance by him at annual conventions of school accountants where modern and advanced methods of school accounting are reviewed and discussed.

Dissection of School Accounts and Preparation of Balance Sheet, Operating and Other Financial Statements.

(*a*) The total value of school property in Wheeling, after deducting depreciation, is $1,071,454.13. While it would cost twice this amount to replace it, this is the amount it approximately represents in modern educational values.

(*b*) In 1919–20 the schools expended $421,227.38, of which $376,427.47 (89.4 per cent) was for expense (salaries, supplies, and repairs); and $44,799.91 (10.6 per cent) was for investment (additions and improvements).

(*c*) The total revenues were $426,400.97, of which $337,884.10 went to the school fund and $88,516.87 to the building fund.

(*d*) The following show conditions as of June 30, 1920, and indicate the forms in which it is suggested that the several accounts be kept:

INDEPENDENT SCHOOL DISTRICT OF WHEELING, W. VA.

Balance Sheet (All Funds Together).

ASSETS.		LIABILITIES.	
Land	$315,101.66	Bonds outstanding	$120,000.00
Instructional buildings	650,652.47	Accounts payable	[2] 46,138.90
Instructional equipment	77,700.00	Surplus	56,812.49
Janitors' residences	28,000.00		
Instructional supplies	[1] 5,000.00		
Insurance (prepaid)	[1] 500.00		
Taxes receivable (delinquent) from current and prior years	[1] 5,000.00		
Cash	51,312.49	Investment of school corporation	910,315.23
	1,133,266.62		1,133,266.62

Operation Statement (School Fund).

Expenses pertaining to 1918–19	[3] $4,021.86	School fund revenues	[4] $337,884.10
Expenses pertaining to 1919–20	371,405.61	Excess of expenses over operation revenues	37,543.37
	375,427.47		375,427.47

Capital Account Statement (Building Fund).

Investment pertaining to 1918–19	[3] $1,000.00	Building fund revenues	[5] $88,516.87
Investment pertaining to 1919–20	44,799.91		
Excess of revenues over investment	42,716.96		
	88,516.87		88,516.87

[1] Estimated.
[2] Deficit in school fund June 30, 1920.
[3] These two items make a total of $5,021.86, the school fund deficit on June 30, 1919.
[4] Available for school operation, upkeep, and miscellaneous expenses.
[5] Available only for additions and improvements.

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TABLE 4.—*Statement of property of the independent school district of Wheeling, as of June 30, 1920.*

Items.	Total.	Land (original cost).	Instructional buildings.		
			Type of construction.	Date.	Cost.
Total	$107,145,413	$31,510,166	.....	.....	$65,065,247
Elementary schools	720,393	123,000	.....	.....	527,693
Washington	52,000	10,000	Brick	1887	36,000
Clay	52,000	10,000	...do	1862	36,000
Jefferson	46,500	8,000	...do	1897	33,000
Union	97,000	15,000	...do	1908	73,000
Center	51,613	10,000	...do	1880	35,113
Webster	84,000	5,000	...do	1893	73,000
Madison:					
Old building	212,280	25,000	...do	1918	97,514
New building		25,000	...do	1921	52,066
Ritcher	61,000	10,000	...do	1872	42,000
McKinley	34,500	5,000	...do	1887	25,000
Lincoln[3]	29,500	(4)	...do	1893	25,000
Secondary schools	30,895,947	150,000	.....	.....	12,295,947
High school—main building	28,295,947	140,000	Brick	1915	11,095,947
Home economics building	26,000	10,000	...do	(2)	12,000
Athletic field	4,210,166	4,210,166	.....	(2)	.....

Items.	Instructional equipment (cost).	Janitors' residences.		
		Type of construction.	Date.	Cost.
Total	$77,700	.....	.....	$28,000
Elementary schools	41,700	.....	.....	28,000
Washington	3,000	Frame	1887	3,000
Clay	3,000	Brick	1874	3,000
Jefferson	2,000	...do	1897	3,500
Union	5,000	...do	1884	4,000
Center	3,000	...do	1882	3,500
Webster	6,000	(1)	.....	.....
Madison:				
Old building	5,500	Frame	1889	4,000
New building	3,200			
Ritcher	6,000	...do	1890	3,000
McKinley	2,000	.....	(2)	2,500
Lincoln[3]	3,000	Frame	1885	1,500
Secondary schools	36,000	.....	.....	.....
High school—main building	32,000	(1)	.....	.....
Home economics building	4,000	.....	.....	.....
Athletic field	.....	.....	.....	.....

[1] Janitor has his residence within the school building.
[2] Date of construction not obtained.
[3] Lincoln School is a school for colored children, and has both elementary and high-school grades.
[4] The grounds of the Lincoln School are a part of the city commons, and therefore title to the land is not vested in the board of education.

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TABLE 5.—*Statement of 1919–20 expenditures by character and function, as of June 30, 1920.*

	Amount.	Per cent.
Total expenditures	$421,227.38	100.0
Expense	376,427.47	89.4
Financing [1]	12,829.01	3.0
Direction and control	9,525.82	2.3
Teaching supervision	5,820.80	1.4
Instructional service	266,970.91	63.4
Operation of buildings and grounds	35,587.74	8.5
Upkeep of buildings, grounds, and equipment	34,736.45	8.2
Auxiliary agencies and other activities	10,956.74	2.6
Investment	44,799.91	10.6
Additions and improvements	34,799.91	8.2
Bond payments	10,000.00	2.4

[1] Interest on bonds, interest on bank overdrafts, commission to city collector on collections, and fidelity insurance.

TABLE 6.—*Statement of revenues for 1919–20.*

Items.	School fund.	Building fund.	Total.
Total	$337,884.10	$88,516.87	$426,400.97
Cash balance, July 1, 1919	.....	33,031.51	33,031.51
Federal aid (Smith-Hughes fund)	1,074.25	.....	1,074.25
State funds [1]	34,379.51	5,449.31	39,828.82
Local taxes:			
In 1919–20	292,462.74	48,483.12	340,945.86
Delinquent from prior years	4,738.95	752.42	5,491.37
Tuition fees	1,384.46	.....	1,384.46
Sales of material and supplies	1,679.38	.....	1,679.38
Depository interest	1,741.09	472.70	2,213.79
Miscellaneous revenues	423.72	327.81	751.53

[1] Not funds in the nature of State aid, but funds representing a tax on corporations and penalties upon estates of deceased, collected by the State in Wheeling and so returnable to the locality.

TABLE 7.—*Consolidated balance sheet as of June 30, 1920 (all funds).*

ASSETS.		LIABILITIES.	
Fixed property:		Funded debt:	
Land	$315,101.66	Bonds outstanding	$120,000.00
Instructional buildings	650,652.47	Capital investment	951,454.13
Instructional equipment	77,700.00		
Janitors' residences	28,000.00		
Total	1,071,454.13	Total	1,071,454.13
Current assets:		Current liabilities:	
Stores (instructional supplies)	[1] 5,000.00	Accounts payable	[5]
Insurance (prepaid and unearned)	[2] 500.000	Surplus	15,673.59
Taxes receivable (delinquent)	[3] 5,000.00		
Cash—Building fund $51,312.49			
School fund 46,138,90	[4] 5,173.59		
Total	15,673.59	Total	15,673.59
Grand total	1,087,127.72	Grand total	1,087,127.72

[1] Estimated on hand at end of fiscal year.
[2] Estimated.
[3] Delinquent taxes of current and prior years.
[4] Credit balance, representing overdraft on bank.
[5] Accounts payable undoubtedly existed at this time, but they were not readily obtainable from the accounts as maintained.

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TABLE 12.—*Independent school district of Wheeling, W. Va.—Expenditures for fiscal year, 1919–20*—Continued.

	Per cent.	Amount.
Upkeep of buildings, grounds, and equipment:		
Elementary schools—		
Undistributed	0.1	[2]$490.29
White schools	6.4	27,075.64
Colored schools	.1	550.02
Total	6.6	28,124.95
Secondary schools—		
White schools	1.6	6,428.16
Colored schools	.....	183.34
Total	1.6	6,611.50
Total upkeep of buildings, grounds, and equipment	8.2	34,736.45
Auxiliary agencies and other activities:		
Promotion of health of school children	1.7	7,101.89
After-school playground supervision	.....	98.50
Lectures, graduation exercises, and celebrations	.1	535.75
Participation in expenses of Mozart School[4]	.....	940.60
Contribution to teachers' pension fund	.....	2,280.00
Total	2.6	10,956.74
Investment:		
Additions and improvements—		
Land and improvements to land	4.1	17,444.00
Buildings and heat, light, and plumbing equipment	2.7	11,598.01
Instructional equipment	1.3	5,402.90
Miscellaneous equipment	.1	355.00
Total	8.2	34,799.91
Payment of bonds (increase in ownership)—high-school bonds	2.4	10,000.00
Total investment	10.6	44,799.91
Total expenditures	100.0	421,227.38

[1] Teaching service of industrial education, home economics, physical instruction, etc., not distributed by school buildings.
[2] Miscellaneous building operation expenses not distributed by school building.
[3] Miscellaneous upkeep expenses not distributed by school building.
[4] The Mozart School expenditures are shared by three different school districts, of which the independent school district of Wheeling is one.

(*e*) The point that referendum approval of a bond issue authorizes a tax levy for a bond principal and interest fund in addition to other school taxes seems never to have been considered by the board.

(*f*) The legality of the school levy for 1920, which includes a tax for high school, from a reading of such sections of the school law as could be found, appears questionable. But the law which relates to the independent school district of Wheeling is such a matter of patchwork that the question is probably only to be solved by an extensive legal search and then confirmed by a court ruling.

(*g*) The present policy of the board in regard to the teachers' pension fund as to appropriating a sufficient amount yearly to pay pension annuities without the principal of the fund being impaired should be incorporated permanently in the rules and regulations of the board.

(*h*) A statement of the expenditures of the schools in 1919–20 by functions has been prepared in detail and will be shown as an appendix to the report.

THE PUBLIC LIBRARY.

(*a*) Prior to the present year, when the board increased the library tax from 1½ to 1¾ cents, Wheeling has taken advantage of but one-fourth of its authorized power to tax 6 cents per $100 for library purposes.

(*b*) Compared with 10 years ago the activities of the library have more than doubled.

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(c) A balance sheet prepared for the library as of June 30, 1920, shows its net investment to be $84,340.71, and its surplus $1,816.65.

(d) An operating sheet for 1919–20 shows an excess of revenues over expenditures to the amount of $1,616.65.

(e) A graph, covering period of the last 10 years, shows book circulation and cost per 100 books circulated. The cost of library administration and book service is so low as to merit criticism rather than commendation. A per capita circulation in Wheeling of 1.9 and a cost of $8.37 does not show the liberality of such cities as Chicago, Cleveland, and Pittsburgh, which have a per capita circulation of 2.2, 4.8, and 2.5, respectively, and which expend $10.30, $13, and $28.10 per 100 books circulated. (Analysis of library expenditures of those cities in 1916–17.)

(f) Chicago spends 22.2 cents, Cleveland 62.6 cents, and Pittsburgh 69.9 cents per capita for public libraries; whereas Wheeling spends 21.4 cents. Obviously Wheeling should begin the construction of branch libraries and be more liberal in its expenditures for library personnel and in its purchase of books.

CONSTRUCTIVE RECOMMENDATIONS FOR SCHOOL FINANCIAL AND BUSINESS PROCEDURE.

(a) What is vitally necessary for the schools is the establishment of a business department to be headed by a subexecutive who shall report to the board via the superintendent of schools.

(b) Such a department should contain an accounting staff of adequate size to furnish the superintendent, the board, and the public the same kind of financial and statistical information as is commonly required by any first-class business concern.

(c) Modern accounting methods and procedure should be adopted.

(d) Up-to-date filing apparatus should be installed; likewise other labor-saving devices wherever practical.

(e) All contracting and purchasing should clear through this department, and a complete system of stores control should be put into effect.

(f) All janitorial and repair service should be under the technical control and supervision of this department, and under the managerial supervision of the various school principals.

(g) This department should be emphatically a service agency to the school system as a whole, to the superintendent, and to the board.

(h) A modern budget system should be adopted by the board. Such a budget should be prepared on the basis of functions and should include the originating of departmental estimates by the heads of the various school departments. These estimates should be transmitted to the business department for combination and analysis, and then be forwarded to the superintendent for review. He, as the schools' executive, should be responsible for the budget in its entirety, and in its presentation to the board it should represent the policy and program which he recommends for the schools for the ensuing year. The function of the board should then be the approval or disapproval in total or in part of the budget as submitted. Upon its approval and formal adoption by the board the budget should be the superintendent's legalized authority for the ensuing year's expenditures, and he should be the administrative official to be held responsible for the board for the execution of the budget as approved.

(i) An amendment to the school code should be immediately presented to the legislature, which will make mandatory the adoption of the school budget for the ensuing year prior to the close of each fiscal year, and thus eliminate the hiatus of financial authority which at present exists between the beginning of a school year and the date prescribed by law for the adoption of the budget by the board several weeks later.

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IV. SCHOOL BUILDINGS AND GROUNDS.

DIFFICULTIES INHERENT IN THE SITUATION.

The city of Wheeling is so crowded between the hills and the river that there are really no vacant spaces suitable in size, contour, and position upon which to locate schoolhouses in any satisfactory way, and therefore the school board is faced with great difficulty when the problem of selecting new sites arises. One of two things will have to be done if the board insists on proper sites, as it should: It will be necessary either to enter extensive condemnation proceedings in order to clear spaces large enough, or else accessible sites must be found beyond the ordinary limits of the city and some arrangements made for transportation to these.

It is recommended, therefore, that the board take this matter in hand at once, and after due consideration and public discussion settle on a policy to pursue when future buildings are under consideration. Each school principal, with the cooperation of his teachers, should be asked to prepare a "pin map" showing where the students now attending school live. These maps will show at a glance from what parts of the city the children come and how, relatively, they are situated with reference to the present buildings. If such maps are prepared each year, then objectively they will show any possible shifting of the clientage and a hint at least of how to anticipate needs.

SURROUNDINGS AFFECT THE EFFICIENCY OF A SCHOOL.

In addition to the problem of congestion as it relates to needed sites, the problems of dust and noise should receive more consideration than heretofore. Union School site is a horrible example of selecting a lot too close to a noisy, dirty, and dangerous railway; and the Ritchie School is not much better off.

The present school lots are totally inadequate in size to permit any playgrounds of real consequence. A real school playground, big enough to satisfy school children, is the best democratizing agency possible, and far more effective most of the year for health development than any gymnasium.

ORIENTATION AND LIGHTING.

Classrooms of school buildings are best lighted and best purified by sunshine when the windows open toward the east or west only.

The lighting of all the school buildings in Wheeling is seriously faulty. In the first place, all the classrooms where it was possible have bilateral lighting. This is bad, and all thoughtful teachers know it. Under such conditions either the teacher or the pupils must face toward windows.

In most cases the pupil is compelled to work in his own shadow, and because of cross lights he is handicapped in many other ways.

In all future buildings the house should be so planned and set on the lot as to give east or west exposure on the long side of all classrooms, and no windows should be set in other walls. These windows, at least five in number, should be set with sills 4 feet above the floor, and should run to the ceiling, or as close to the ceiling as possible. They should be grouped closely together, and the glass area should be approximately one-fourth of the floor area.

Adequate reasons for these directions may be found in any good book on school hygiene.

HEATING AND VENTILATION.

The hot-air heating systems found in most of the present school buildings do not represent the best practice, nor the most economical for school buildings. A low-

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pressure steam heating plant is the best. Direct radiation in the rooms with thermostatic regulation, but without the use of fans, will in the long run prove most efficient.

ADEQUATE SUPPLIES OF FRESH AIR ESSENTIAL.

It is almost impossible with hot-air furnaces to keep the various rooms evenly and properly heated and healthfully ventilated. In future buildings low-pressure steam heating should be installed, with ample radiation in each room, controlled by thermostats, and teachers should be required to regulate the ventilation through properly constructed windows.

JANITOR SERVICE.

The janitor service in the school buildings of Wheeling is, with few exceptions, inferior, and the prime cause of this inefficiency is due mainly to the fact that the janitors are not placed directly and specifically under the direction and control of the principals of the various schools. There should be no divided responsibility here. The principal should be held responsible for the hygienic condition and safety of the building, and this responsibility necessarily carries with it authority over the service of the janitor.

The janitors should be well paid for their arduous services, and should be selected and retained by reason of their efficiency and ability to perform their very important duties. Next to the principal of the school, the duties and opportunities of the janitor call for good judgment, initiative, and special knowledge almost as much as do those of any teacher.

Many liberties are now being taken by the janitors of some of the buildings, such as storing their own furniture, vegetables, canned goods; doing their own family washing during school hours, etc., in school buildings. Such use of school buildings is not desirable, and should be discontinued.

FLOORS OF SCHOOLHOUSES.

The school buildings of Wheeling were originally furnished with unusually good floors, but they have been badly abused and show lack of proper care. Most of the old buildings were supplied with fine oak floors, and these have held up well under the abuse they have been subjected to. They are now dry; cracks have opened, and splinters are appearing. This is largely due to the wet scrubbings they have had to undergo.

Floors should never be scrubbed with soap and water, for this is the surest and quickest way to ruin them. They should be sanded and swept clean, and then oiled and swept with some sawdust preparation containing the proper porportion of oil, sand, and sawdust. This will keep the floors cleaner, prevent clouds of dust from rising, and also prevent the boards from alternately swelling and shrinking, as will be the case when scrubbed with soap and water.

FLOORS SHOULD BE CLEANED AND OILED.

All the floors of the various buildings should be thoroughly cleansed and then cautiously and properly oiled with a light oil. Oiled floors are more free from dust, last longer, look better, save work in keeping them clean, and are more hygienic than dry floors.

COLOR OF WALLS.

The treatment given to the walls of the schoolrooms in Wheeling generally violates not only the canons of good taste but the requirements of utility. Not only are many of the rooms unsightly and esthetically annoying but the effect is even harmful, in that the rooms are darkened when more light rather than less is needed.

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Scientific investigation has determined in no uncertain terms the colors which are best to use on schoolroom walls, and school boards should make sure that a decorator who enters a schoolroom knows what is best and will then faithfully follow intelligent guidance.

The following brief summary of suggestions resulting from investigations on this subject may be helpful in planning future changes:

1. The wall space between the floor and the window sills, and the chalk troughs, should be a light brown.

2. Side walls and ceilings should be in a light buff, or cream, depending to some extent on the illumination and the location of the building with reference to climate. A light gray is also acceptable. Colors from the red end of the spectrum should never be used.

CLOAKROOMS.

Cloakrooms are necessities in all elementary schools, and locker rooms for high schools. The plans of the older buildings in Wheeling made insufficient space for cloakrooms, and as a result the children's wraps and other articles of clothing are often piled up together, thus offering opportunity for the transmission of parasites from child to child and also preventing proper airing or drying in damp or rainy weather.

BLACKBOARDS.

The various school buildings of Wheeling are supplied with excellent slate blackboards, and in general these are in splendid condition. However, they are not always set at the proper height to meet the needs of the children through the various grades.

In all future buildings, in those rooms designed for first and second grades, the blackboards should be set 26 inches above the floor; in those for the third and fourth grades, 28 inches above the floor; in those for the fifth and sixth grades, 32 inches above the floor; and in those for the seventh and eighth and high-school grades, 36 inches above the floor. The blackboard should be 36 inches wide, from top to bottom, except at the teacher's end of the room, where it should be 48 inches wide.

STAIRWAYS AND FIREPROOFING.

If the furnaces, coal rooms, chimneys, stairways, and halls of school buildings are made fireproof; if janitors are careful to keep all greasy mops or rags, oils, and other inflammable materials in fire proofed rooms; and if all electric wiring is inclosed in steel tubes and otherwise properly protected, then there is little danger to the children or to the buildings from fires starting from within. Should a fire menace from without there will always be ample time to get the children out before they are endangered.

There is little or no value in fire escapes for school children, because with safe and adequate stairways they can be gotten out of danger by means of carefully planned and thorough fire drills in less than one-tenth of the time, and with far greater safety, than through any fire escape ever made. The chief effect of fire escapes at public-school buildings of two stories (and they ought not to be any taller) is to produce a feeling of false security in the minds of parents.

CONSTRUCTION OF STAIRWAYS AND EXITS.

Stairways should have ample landings, wide treads, medium risers, and strong, properly placed handrails. They should be well lighted and sufficient in number and capacity to meet safely all possible demands.

Many, in fact, nearly all, of the older school buildings in Wheeling are a fire menace, because practically none of the precautions of construction noted above have been complied with. Hence, janitors should be constantly on guard, and should not be permitted to leave their buildings during school hours. Elsewhere this report emphasizes the need of keeping basements from débris.

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SIZE OF CLASSROOMS.

Forty pupils are enough for a teacher to handle in the elementary grades, and a classroom 30 feet long, 22 feet wide, and 12½ feet high is sufficient space for this number of pupils. This will accommodate five rows of desks, with eight in a row, and allow sufficient room for aisles and other necessary space. Many of the classrooms in the old buildings are more nearly square, and contain considerably more cubic feet of space than necessary. This increased the cost of the buildings unnecessarily, and likewise has constantly demanded more heat, more cleaning, and more expense for general upkeep.

Classrooms for high schools must vary to accommodate large, medium, and small classes. Satisfactory dimensions and arrangement of rooms can be arrived at only when the architect consults with the principal and teachers who are to use the particular building in question.

TOILETS AND URINALS.

All toilet seats should face toward windows, and should be set along walls in single rows, and not back to back. Such rooms should be arranged in stacks on the main floors and kept out of basements. These rooms should open out of rest rooms, lavatories, or locker rooms, and not directly into halls. If possible, direct-pressure washout fixtures should be installed. Juvenile sizes should be installed for the first four grades at least. All urinals should be set under windows and furnished with glazed white stalls and set a little below the level of a tiled floor. While this floor should slope slightly toward the urinals, it is a serious blunder to make this slope too far back.

The best fixtures are in the long run most economical. Toilet rooms must have plenty of light and sunshine and abundant ventilation.

PLACING DESKS.

If desks are fastened to the floor, great care must be taken to space them properly, and at about 2½ inches minus distance. That is to say, a vertical line from the edge of the desk to the floor should strike the seat board about 2½ inches back from its front edge. Desk chairs are better, for these can be selected in a number of sizes, and can be shifted to take advantage of conditions and demands. They are not fastened to the floor, and can therefore be adjusted more readily to individual children.

STORAGE OF FURNITURE AND OTHER DISCARDED MATERIAL.

Every city system of schools should have a central storage building and shop facilities, into which to check all surplus furniture where repairs may be made, and where lists of all temporarily unused equipment may be kept. Under this plan, whenever any item of furniture, material, or supplies is needed in any building, the superintendent can quickly and accurately determine whether the item requisitioned is available or whether it is necessary to purchase.

SUMMARY OF BUILDING NEEDS.

MCKINLEY SCHOOL.

The lighting of the classrooms in this building is bad and has been from the first. Whenever windows are placed on two sides of a classroom either the teacher or the pupils will have to face glaring windows.

It is possible to take two of the windows from the north and south ends of these rooms and set them in the east and west walls, and to close up the third window to the north and south. While this will give far better illumination than is now provided,

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it will not furnish the requisite ratio of glass surface to floor surface for any of the rooms. There seems to be no remedy for this deficiency, because the classrooms were not properly proportioned as to length and width when the building was planned.

The walls in this building should be refinished in a light color. A light creamy buff, or a very light gray is safe and acceptable. The present disagreeable green is not only annoying to sensitive children but also absorbs a great deal of needed light.

The floors of this building have been badly damaged by repeated scrubbings, and should be thoroughly cleaned and then oiled.

RITCHIE SCHOOL.

The old building of this school should be discarded at the very earliest opportunity, for it would cost more to reconstruct it to meet modern demands than to construct an entirely new building. No money should be expended on this building, save that which is necessary to keep it as safe and clean as possible during the time it may be used.

The basement should be thoroughly cleaned of all rubbish and broken and discarded furniture.

When this building was inspected by the representative of the survey commission, it was necessary to send for the janitor, who could not be found about the building. There is too much at stake, with a building occupied by children, to allow any possible danger to arise without some responsible person at hand to take immediate action. If some imperative mission takes the janitor away from the building during school hours, some other responsible person should be substituted until his return. In every such case the principal should approve the arrangements in advance.

The ventilation of neither building at this school is adequate, and the teachers should all be carefully directed how to use the windows most effectively for this purpose.

Unfortunately, the newer building is situated so close to the railroad tracks that effective school work is practically impossible.

With the exception of bilateral lighting, setting the windows too near the floor, and insufficient cloakroom space, this annex is quite satisfactory as far as the building is concerned.

The fan room needs cleaning, and the fine maple floors provided should be thoroughly cleaned and oiled immediately, and scrubbing with water discontinued.

WEBSTER SCHOOL.

No expensive changes looking toward making this building meet acceptable modern demands should be undertaken. It should be kept in as good condition as possible, and abandoned at an early date, as soon as a new and modernly planned larger building can be provided to take care of the children in this district and most of those now attending the Ritchie School.

The following repairs should be made at once: (1) Correct the insanitary condition of the urinal; (2) cut down the sides of the stalls in both toilet rooms, so to give better light and better ventilation; (3) clean out the basement, especially the fan room; (4) retint the walls in a light cream color; (5) oil the floors, and discontinue scrubbing them with water; and (6) guard the building carefully to prevent fires.

CENTER SCHOOL.

No expensive repairs should be made on this building, and it should be abandoned as soon as the board can command the means to do so.

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MADISON SCHOOL.

It is unfortunate that in the reconstruction of the old building the windows were not changed from the old type of windows in adjoining walls of classrooms to the better plan of unilateral lighting. It is probably inadvisable to make these changes now, but the children and teachers will necessarily suffer as a result of this oversight.

It is not too late, however, to correct the faults of the toilets and urinals by installing modern appliances in a modern way. The white walls of this reconstructed building should be tinted in a very light buff, while the ceilings may either remain white or, better, be toned down so as to forestall glaring lights.

It is to be regretted that the assembly room was constructed at great expense with a sloping floor, thereby practically limiting its use to auditorium purposes only. At less expense in construction and furniture, it might have been made to serve as an auditorium, as a gymnasium, a study hall, a community entertainment and exhibition room, and for other purposes.

It is inadvisable to put manual training, home economics, or any other kind of important school work in basement rooms, and those classes now situated in the basement of this building, or any other school in the city, should be removed therefrom at the earliest possible date. Such work is very important work, and should not be handicapped by being put in unsuitable quarters.

WASHINGTON SCHOOL.

This building is a duplicate of the old Madison building, and is a monumental demonstration of how not to plan a school edifice. It would be poor economy to undertake a radical reconstruction of this building, and the only thing to do is to use it till such time as the board can get sufficient means to provide a new building in a better location away from the noise, smoke, and dust of the railway yards.

CLAY SCHOOL.

It would be unwise to undertake any substantial reconstruction of this building. It should be kept in as safe and sanitary condition as possible, until it can be displaced with a new building on a larger lot.

A few repairs and changes should be made immediately:

1. The hot-air ducts of the old and displaced heating system, leading from the furnace room to the various classrooms, should be carefully and securely sealed in order both to prevent dust and foul air ascending into the classrooms, and to eliminate the very definite fire hazard involved.

2. There should be better and more thorough fireproofing on the joists above the boilers and smoke pipes. The fire drills now used should be continued, and with every added improvement possible.

3. The urinal is unsatisfactory, for the slanting slate is too wide and too steep for safety. This should be cut off to a point within 16 inches of the drain, the level cement floor continued to this point, and the iron bar removed. These changes, for obvious reasons, will keep this room in a much better sanitary condition.

4. Certain rooms have erroneously placed desks, and these facts were pointed out to the principal and plans suggested for better arrangements.

JEFFERSON BUILDING.

An additional window should be set in the east side of each classroom opening toward the east, and one in each classroom opening toward the west, and the windows on the north and south sides of these rooms should be closed up.

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The desks in the east rooms should all be made to face the south, while those in the west rooms should be made to face the north. Then, if these desks are grouped as closely as practicable to the window side, with eight desks in a row from front to back, in five rows, the pupils will then get light from the left and the teacher will not have to face the light.

While this arrangement will not give so much area of glazing to each room as they now have, the light will be much better and the teacher will not have to face the light.

The warm-air registers in the floors of the classrooms should be removed and placed in the walls, if possible, about 8 feet above the floor. If this can not be done, a better heating plant of low-pressure steam, regulated by thermostats, should be installed with direct radiation in the rooms. The fan should then be removed and dependence placed upon windows for ventilation. When the inspection was made, the ventilation was faulty and the rooms were too hot. This is a good building. With proper care, and the changes suggested, it can be used for many years safely and with satisfaction.

UNION SCHOOL.

This building is most unfortunately placed so near the steam railway tracks as to cause a great loss of time from noise and suffering from the gas-ladened smoke of passing trains. There are many good features in this building despite bad fenestration. Nothing can be done to get rid of the noise, which will in all probability increase instead of decrease. It would be difficult and expensive to rearrange the windows, and so only the following recommendations are offered:

1. The thermostatic system is out of order, and should be corrected at once, for not only is the health of the teachers and children involved, but also the economic use of fuel.

2. There is a good deal of débris and furniture, some of it not belonging to the school, stored in the basement. All of this not needed should be removed and stored elsewhere.

3. The toilet seats should be kept in a more sanitary condition, and all flushing apparatus should be thoroughly cleaned and kept in better repair. Some of this apparatus was not working at all. As soon as possible, individual and direct flush toilet seats and enameled urinals should be installed. The former should all be set to face the windows, while the latter should be set directly beneath the window. This will insure better ventilation, a lighter room, and a great saving in water and electricity.

HOME ECONOMICS BUILDING.

The basement of this building is rather poorly ventilated, and is likely to be damp in summer. The furnaces are rather dangerously close to the joists above, and, though gravel has been placed on their tops, great care should be given these in severe weather, when heavy firing may become necessary, to prevent overheating and consequent danger.

HIGH SCHOOL.

The high-school building was miserably planned, and beyond that little can be said that will be of any help to the board. In the first place, the lot was totally inadequate and greatly handicapped the architect. In the second place, there is evidence everywhere that the plans were not submitted to those who know the needs of a modern high school, and that no one studied them carefully from the point of view of securing a serviceable and hygienic school building.

The lighting is faulty, many of the rooms are badly proportioned, the basement is cut up into dark cubby-holes and passageways, and exterior decoration seems to have been preferred to adequate lighting.

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It is a painfully disappointing building. Nothing can be done in an economical way to remedy its defects or make it more useful and acceptable, and the youth who flock to it for many years to come will suffer because no one who knew what they needed was called to supervise its planning.

The only changes now practicable are a few readjustments of desks and classes so as to conserve the vision of the teachers and children, and a general cleaning up of the basement.

LIBRARY.

In view of the fact that no member of the survey commission has made a special study of the requirements of a library building, this report discusses only such general questions as those of heating, lighting, etc.

In the reading rooms the windows were set so near to the floor that it is impossible to set bookcases under them, and hence a mistake was made both from the point of view of the loss of book space and better illumination. The bottoms of windows for reading rooms should always be well above the level of the eyes of the reader when seated.

This is particularly true on the second floor. There the small windows drop almost to the floor line, while the tops are many feet below the ceiling above. It must certainly be true that the upper rooms of this building are very warm in summer, and that adequate ventilation is peculiarly difficult.

It seems evident that the plans of this building were not thoroughly studied from the point of view of use, and that much help might have come from calling upon practical librarians for suggestions.

LINCOLN SCHOOL.

The basement of this building needs cleaning and repairing, especially the cold-air chamber and the door leading to it. The girls' toilet needs better ventilation and lighting. The grounds in the rear should be drained and graveled. The electric lights in the domestic science room should be fitted with proper shades to reduce the glare of uncovered bulbs; and the forge better protected to prevent smoke and gas from escaping into the rooms above.

The recent additions made to this building were badly placed, because of the cutting off of light from other rooms. No further direct additions to this building should be made. If more room is needed, another building should be constructed on another lot, for the heating plant is now insufficient in severe weather for safety, and further additions would interfere with the lighting, already very bad.

V. THE BUILDING PROGRAM.

WHY WHEELING NEEDS A SCHOOL BUILDING PROGRAM.

The following paragraphs outline the main features of a school building program looking forward over a number of years. Action on these proposals should await decision on the more fundamental need of the Wheeling schools, namely, that of reorganization of the scheme of administration.

Nevertheless, one of the serious weaknesses in the school situation has been the lack of a comprehensive and forward-looking building program, guided by expert knowledge of the requirements of a modern school system. Even with a reorganized school board, therefore, the school buildings and equipment will need to be modified in order to make possible all of the improvements suggested in this report.

Modifications in the school building situation must necessarily be made gradually and only after careful study of possible future contingencies.

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SCHOOL BUILDINGS DO NOT MEASURE UP TO MODERN REQUIREMENTS.

Wheeling's school plant is not modern. With the exception of Madison and Union, there has been no new elementary school for 24 years. Five of the 9 elementary schools were built 34 or more years ago. One was built 49 and another 50 years ago. The buildings are old and archaic in construction; in a number of them the sanitation is bad; and in others the lighting is so inadequate that in some States the children would be forbidden by law to enter them.

With few exceptions, the buildings are utterly lacking in modern educational facilities, such as auditoriums, gymnasiums, shops and laboratories, drawing and music rooms, libraries, and playgrounds.

IMPORTANCE OF WORK AND PLAY AS WELL AS STUDY IN SCHOOLS.

What Wheeling needs primarily is to realize that opportunities for work and play in school are educationally as important as provision for study. There has evidently been an attempt to provide some modern school activities in some schools, but they are very inadequate. One reason is because the public in general does not fully realize that children have always been educated through work and play as well as study, and that they can not be deprived of any of these three things if they are to receive a full, rich education.

Fifty years ago, children had opportunities for this healthy work and play outside of school so that it was not necessary for the school to provide anything but classrooms. But during the past 50 years has come the growth of the modern city, with its factories and mills, and office buildings and tenements which go up on all vacant city lots and which have deprived children of the opportunities for the wholesome work and play which are essential elements in their education. The city home or apartment, unlike the farm, with its many opportunities of "learning by doing" can offer few educational opportunities in the way of healthful work which develops the ability to think by attacking problems to be solved. There is no planting and harvesting to be done; few, if any, animals are to be taken care of; and it is a rare city home that has a workshop or laboratory. Yet children, until recently, have received much of their education through the opportunity to handle tools, to take care of animals, and to experiment in making and using things.

SCHOOLS MUST RECOGNIZE CHANGING COMMUNITY CONDITIONS.

But the city not only fails to educate children in the right direction; it educates them in the wrong direction, for the street, with its dangers to the physical and moral life of children, too often becomes their only playground; and street play means education, not in health and strength and wholesome living, but precocious education in all the vicious side of a city's life.

For these reasons it has come to be recognized that the city school must not only provide classrooms, but it must also return to the children the opportunity for the healthful work and play which the home can no longer supply. This means that school buildings must contain not only classrooms, but auditoriums, gymnasiums, laboratories, drawing and music rooms, shops, libraries, and playgrounds where these activities may be carried on.

The main problem in the building program is to recognize existing buildings and plan new buildings so that the children in each building may have not only classrooms, but modern educational facilities. How is such a program to be carried out within the financial ability of the city?

There are two methods of meeting the situation. One is by the traditional method of school organization in which all children are expected to be in school seats at the same time, and if provision is made for special activities, such as shops or cooking rooms, the classrooms remain vacant when such facilities are in use.

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THE WORK-STUDY-PLAY OR PLATOON SCHOOL.

The other method is commonly known as the work-study-play or platoon plan now in operation in many cities in this country, notably in Pittsburgh, Pa., where the plan has been in operation for six years.[2] This plan makes modern educational facilities financially possible for all children by using all parts of the school all the time instead of letting classrooms lie idle while shops and laboratories are in use. That is, it applies the principle of the balanced load, or multiple use of facilities. Under this plan, a school is divided into two parts, each containing all grades, and while half the school is in classrooms, the other half is using special facilities. At the end of one or two periods, the group of children who have been in classrooms go to special facilities, and the other group goes to the classroom. This means that only half the usual number of classrooms is needed, i. e., 12 classrooms in a 24-class school. A classroom costs at the present time $16,000 in most parts of the country. Therefore, by using 12 instead of 24 classrooms $192,000 is saved and released for special activities. Under the work-study-play plan, every child gets the same amount of time for the three R's, but he also has 40 minutes for play a day, 40 minutes of auditorium, and 40 minutes of shop or science or drawing. Furthermore, because of the flexibility of the program, the school can be adapted to the needs of the child, instead of vice versa.

RECOMMENDATIONS FOR A SCHOOL BUILDING PROGRAM.

By abandoning 6 old buildings, putting up 3 new buildings, and putting in modern equipment in 3 existing buildings, it is possible for Wheeling to have a school plant in which *every* school shall have adequate classrooms and also an auditorium, gymnasium, shops, cooking and sewing rooms, science laboratories, drawing and music rooms, a library, and kindergarten. *And it is possible to do this within the financial limits of the city.*

The schools which should be abandoned ultimately are the Ritchie, McKinley, Clay, Jefferson, Center, and Lincoln. This will eliminate the costs of upkeep and outlays for these buildings, which in the year 1920 amounted to $32,842.77. Wheeling has too many small buildings. The larger the buildings, within limits, the richer the facilities that can be given to children; the older and smaller the building, the more expensive it becomes. For example, the per capita cost of the Ritchie School with an enrollment of 510 pupils is $59.10, whereas the per capita cost of Madison with 906 pupils is only $45.35. A summary of recommendations for each school district follows.

RITCHIE DISTRICT.

Ritchie and McKinley Schools should both be abandoned, as they are old, insanitary buildings and archaic in construction. Erect in this district a new school building for a 24-class school which would house the children in both Ritchie and McKinley. Under the work-study-play plan, it would need 12 classrooms, 2 shops for boys, a domestic science and sewing room for girls, 1 drawing room, 1 music room, 1 mechanical drawing room, 1 library, 1 chemistry laboratory, and 1 physics laboratory. The total cost would be $462,000. Under the traditional plan of school organization, it would be $659,000. This school should be a combination elementary and junior high school. The high school is so far away and expensive to reach that the children are not likely to go to it from this district, unless their interest is aroused through this preliminary work. The way to increase the enrollment in the high school is by developing modern elementary schools.

[2] See Economic Values of the Platoon Type of School Organization, prepared by William F. Kennedy, with the McKeloy School of Pittsburgh, as a type illustration.

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CLAY DISTRICT.

Clay and Jefferson Schools should be abandoned, as Clay is an old, insanitary building, and Jefferson is too small to maintain economically. Erect a new building for the Clay and Jefferson and the seventh and eighth grade pupils from the Union School, leaving Union as a 6-grade school. This school would also be a 24-class school. The cost would be the same as for the Ritchie School.

WEBSTER DISTRICT.

Center School should be abandoned and the pupils in Center and Webster housed in the Webster School. If this building is organized on the work-study-play plan, there would be ample room for the children of both schools. There would be 988 children, or a 24-class school. There are 18 classrooms in the building, a manual-training room, and a cooking room. Twelve of the classrooms could be used as classrooms, one for an auditorium (it was originally built for this purpose), one for a kindergarten, and the other six for special activity rooms. There is a playground a block and a half away, and a portable gymnasium could be erected there. The cost for equipment for the special activities and for the gymnasium would come to $10,000. Under the traditional plan, 12 additional classrooms would be needed at a cost of $192,000.

WASHINGTON DISTRICT.

Washington is a well-built school, and though not modern can be made to furnish modern educational facilities for children, if operated on the work-study-play plan. Allowing for a kindergarten and a ninth grade (for this should also be a combination elementary and junior high school), there would be 633 children, or 16 classes in the school. There are 16 rooms; 8 could be used for classrooms and the other 8 for special facilities—2 shops for boys, 1 drawing room, 1 music room, 1 nature-study room, 1 library, and 2 rooms for an auditorium. The lot to the south of the school should be purchased for an additional playground, and the house used for domestic science and a kindergarten. A portable gymnasium should be erected on the school grounds. The cost of equipment of the special activity rooms would be $9,000, and the gymnasium $3,500, making a total of $13,500. On the traditional plan, 8 additional classrooms would be needed at a cost of $128,000, and there is no space in which to erect them.

MADISON DISTRICT.

Madison School is a comparatively new building, and although unfortunately constructed in many ways, it is superior to many of the buildings. It should be made into a combination elementary and junior high school, which would give an enrollment of about 1,086, or 28 classes. This should be made into a 30-class school. Counting both the old and new buildings, there are 29 classrooms available without counting the manual-training room in the basement. Under the work-study-play plan only 15 classrooms would be needed. The other 13 rooms could be used as follows—1 chemistry laboratory, 1 physics laboratory, 1 freehand drawing room, 1 mechanical drawing room, 1 music room, 1 sewing room, 1 cooking room, 2 shops for boys, 1 nature study room, 1 library, and 1 kindergarten. Two rooms could be used for gymnasium for girls. A gymnasium for boys could be constructed between the left wing and the auditorium at a cost of approximately $25,000. The cost of equipment for the special rooms would be $7,500. The total cost, $32,500. Under the traditional plan, 15 extra classrooms would be needed. They would cost $240,000 and there is no space in which to put them up.

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LINCOLN SCHOOL.

This is an old, inadequate building, placed inconveniently on a hill, which, if the Wheeling Improvement Association plans materialize, will be used for a national highway connecting with Greater Wheeling. The building should be abandoned and a new building erected at the foot of the hill near the Negro church. As this is a combination elementary and high school, the building would have to be constructed to accommodate 8 elementary classes and 2 high-school classes. Under the work-study-play plan, 4 classrooms would be required for the elementary school and 2 for the high school. There should also be a chemistry laboratory, a physics laboratory, a shop for boys, 2 shops for girls, a drawing room, a music room, a library, kindergarten, auditorium, and gymnasium. All these activities are carried on in the school at the present time, but with very inadequate equipment. A new building of 16 units, at a cost of $16,000 per unit, would be $256,000. Under the traditional plan, 6 additional classrooms would be needed and the cost would be $352,000.

Summary of costs of building program.

School.	Cost under work-study-play plan.	Cost under traditional plan.
Ritchie district, new building	$462,000	$659,000
Clay district, new building	462,000	659,000
Webster district	10,000	192,000
Washington district	13,500	128,000
Madison district	32,500	240,000
Total white elementary schools	979,500	1,878,000
Lincoln School	256,000	352,000
Total	1,235,500	2,230,000

THE HIGH SCHOOL.

According to the above plan, there will be three combination elementary and junior high schools in the city, one at Ritchie, one at Madison, and one at Washington. This will take the ninth grade from these districts out of the high school, thereby leaving plenty of room for the growth in the high school. Such an arrangement will also doubtless result in arousing among the children in these districts greater interest in going to high school because the junior high school work will stimulate their interest in the things that the high school has to offer.

CAN WHEELING AFFORD THE PROPOSED BUILDING PROGRAM?

Wheeling can afford the proposed building program. Wheeling's taxable wealth is given at $65,000,000, although it is estimated that on a 100 per cent valuation the taxable wealth of the city would be over $93,000,000. (See report on school finance.) Compared with other cities of the same population, but with even less taxable wealth, the amount of Wheeling's school property ($1,071,454.13) is below the average. Among 45 cities of the same class it ranks thirty-fourth in the amount of school property. Bayonne, N. J., is also an industrial city of 55,000 population, and its taxable wealth at 100 per cent valuation is $68,485,000. The amount of its school property is $2,524,000. In other words, up to the present time, Wheeling has not spent on her public-school plant the amount of money which her wealth justifies.

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BONDING THE CITY.

The independent school district of Wheeling is able to bond the city for schools up to $3,270,200. It has outstanding bonds for only $120,000. In other words, the district has a leeway of over $3,000,000 before reaching the limit of bonded indebtedness for schools. There is no reason from a financial standpoint why Wheeling should not carry out a building program which would give all the children of the city the most modern educational advantages.

Wheeling can not afford *not* to give these modern educational advantages to her children. It is said that America is the land of equal opportunity in education, but this does not mean opportunity for uniform education, but opportunity for the development of the varied gifts of many individuals. Democratic education means variety of opportunity in accordance with the needs of the individual. If Wheeling does not give this variety of opportunity in work and study and play to the children of all its people, then it is failing to tap the reservoirs of power for its coming citizenship. Moreover, it is laying up trouble for itself in the future, for nothing is more serious to any community than to have the great mass of people feel balked in their power of self-expression and attainment.

VI. THE HIGH SCHOOLS.

SELECTION OF SUBJECTS AND ORGANIZATION OF CURRICULA.

(1) Needs of various groups of pupils should be more definitely served through reorganization of the five curricula now offered.

(2) A scientific curriculum and a fine arts curriculum should probably be added.

(3) Requirements as to subjects should be somewhat as follows (many of these are already in effect):

(*a*) English, two units, first and second year same for all pupils; third and fourth years differentiated to meet needs of (1) pupils in classical and fine arts curricula,(2) pupils in commercial and industrial arts curricula; pupils in other curricula will choose between these two types.

(*b*) Present requirement of 2½ units of mathematics should be limited to classical and scientific curricula; one unit of business arithmetic in commercial curriculum; one unit of business arithmetic or composite mathematics in the general, industrial, and household arts curricula.

(*c*) Three units of social studies in the general curriculum, one in commercial, and two in all others. American history and civics, one-half unit each, required of all pupils.

(*d*) Science, three units in scientific curriculum; one unit in all others.

(*e*) Four units of foreign language in classical curriculum; two units in fine arts and scientific curricula.

(*f*) Four units of household arts or industrial arts in household arts and industrial arts curricula, respectively; one unit of either in general curriculum.

(*h*) Four units in art or music in fine arts curriculum.

(*i*) Physical training, one-fourth unit each year required of all pupils.

(*j*) Include in each curriculum only the elective subjects appropriate to it.

(4) Part-time classes for employed boys and girls should be developed; also a two-year vocational curriculum preparing for wage earning.

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manency of tenure would be a commendable feature if the teachers were adequately trained; as it is, the children of Wheeling do not have the advantage of teachers who have had good education and adequate professional training for their work.

HIGHER STANDARDS OF TEACHING ESSENTIAL.

The teachers in the Wheeling elementary schools need training first, and then inspired, intelligent guidance from principals and supervisors.

No new teacher should be employed in the elementary schools who has not had a minimum of two years of professional training beyond graduation from a standard four-year high-school course. Teachers now in the system should be given a reasonable period, say, five years, in which to meet the new standards. To assist them, study classes for teachers should be organized, including possibly extension course from near-by educational institutions.

Teachers should be required to continue professional growth and development, but endeavor along such lines should be recognized. They should be permitted to visit other schools at least one week each year. Equal salaries for equal ability, training, and experience should be paid throughout the system. The teaching staff should not be recruited entirely from Wheeling.

LACK OF SUPERVISION.

There is much confusion of authority in the present plan of supervision; in general, no one seems to know just how much authority he has or whence it comes. The superintendent attempts to visit each teacher five times each year, but visits possible on this plan must be short and perfunctory. Principals are expected to visit 30 minutes each week in each teacher's room; but this is not regularly done, and such visits as are made are rarely followed by conferences. The time of principals is too largely taken up with routine office work, and they are handicapped by lack of clearly defined authority in their own buildings. Practically all of the principals are able school men and women, capable of wise exercise of supervisory authority.

The special supervisors in physical training and drawing are in reality special teachers, and in some instances are able to secure very little cooperation from the classroom teachers.

LINES OF AUTHORITY SHOULD BE CLEARLY DEFINED.

The present chaotic condition of the supervisory scheme in Wheeling calls for complete reorganization.

The superintendent should deal with the classroom teachers through the principals and supervisors. The principal should be held responsible for the work of his school, and should be given full authority, under the superintendent, in the administration and supervision of his school.

A special supervisor should be appointed for the primary grades. The supervisors of special subjects, as music, drawing, etc., should probably give more time to directing and assisting the activities of teachers, teaching themselves only for demonstration and when the regular teachers are not prepared.

The relations between special supervisors and school principals must be carefully defined. Better cooperation is needed.

A bureau of tests and measurements should be established as an aid to the supervisory and teaching force.

STATUS OF THE SCHOOL PRINCIPAL.

The chief function of the principal should be supervision of instruction, and he should be professionally trained for this important work. The principal should be assigned the duty of conducting teachers' meetings for the discussion of school prob-

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lems; he should have authority to assign school duties to his teaching staff within prescribed limits; he should nominate teachers for confirmation by the superintendent.

GENERAL MANAGEMENT OF SCHOOLS FAULTY.

The classification of pupils in the schools is faulty, as evidenced by the wide range in scores in the various tests, and by the presence of unduly large proportions of pupils who are too old for their grades.

The system of promotions is unsatisfactory, in that a grade below 60 in a single subject sometimes forces a pupil to repeat the work of an entire semester. The plan of having coach teachers is to be commended, but as applied in Wheeling it is ineffective and unsuccessful.

A bureau of tests and measurements should be organized to secure the data upon which to base a modern scheme of classification, grading, and promotions, to the end that children of nearly equal ability and attainments may be placed together. Defective and subnormal children should receive special attention. The coach teachers should be specialists, trained in methods of dealing with backward children.

VIII. PHYSICAL EDUCATION, HEALTH SUPERVISION, HEALTH TEACHING.

Public schools should educate for health, vigor, and sanity. The physical education, medical inspection (health supervision is a better term), and health teaching already established in the Wheeling schools are substantial elements of a program for promoting these objectives. The development of this program is hindered by inertia in the school system and in the public, by unsatisfactory school plants and, perhaps most important, by lack of coherent and effective administrative organization of the schools as a whole.

HEALTH EDUCATION SHOULD COORDINATE MANY ACTIVITIES.

1. Develop the beginnings that have been made in physical education, health supervision, and health teaching into a consistent, complete, and coordinated program. Ultimately it may be desirable to combine these activities into a single administrative unit. For the present the physical education and the health supervision should be developed separately, but in logical and helpful coordination. Health teaching, of necessity, is a divided responsibility and must be developed in connection with physical education, health supervision, and, in the higher grades and in the high school, with such subjects as home economics, biology, and civics.

2. Develop the program of physical education along the lines already laid down, including coordination with community recreation. Make the director of physical education responsible to the superintendent of schools not only for the conduct of his department but also for the selection of his assistants. Appointments should be made only upon his initial recommendation, approved by the superintendent. Develop plans already initiated for preparing teachers in service to take adequate part in the physical education program. See that "classroom physical training" conforms to hygienic principles; such as, conducted only in well-ventilated rooms; exercises chiefly recreative; needs of individual pupils recognized.

3. Provide a clean, well-lighted and well-ventilated exercise room and a minimum of 30 square feet per child of actual playground space for each school. Provide, further, a sufficient number of well-located district playgrounds, large enough to insure for the children and young people of each district such vigorous outdoor games as

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soccer, baseball, and field and track sports. The new public-school athletic field provides for city-wide competitions and exhibitions, but is not a substitute for local district playgrounds.

4. Provide for one full-time director of the department of medical inspection directly responsible to the superintendent for the administration of this department. His duties should include the communicable disease work of the schools, health examination of pupils, supervision of the nursing service, sanitary supervision of school plants, supervision of special classes for subnormal and handicapped children, promotion of hygienic school management, and, in general, supervision of all school conditions affecting the health and growth of pupils. The amount, variety, and thoroughness of work involved will require the full time of a competent man.

Expand and improve the health examination procedure, provide complete examination for all children entering school, all malnourished children, those suspected of tuberculosis or organic troubles, those engaging in competitive athletics. The examination should include the mental status of pupil and the nervous and emotional factors that condition health.

ADEQUATE RECORDS ESSENTIAL TO EFFICIENT WORK.

Improve the recording and the reporting. Make the records more effective as aids to follow-up work with individual children and as means of analyzing and evaluating the work performed. The periodic statistical reports as now made are of little value except for filing. Provide for an annual, analytical report showing scope of activities, achievements, obstacles in the way of achievement, and presenting recommendations for improvements. There should be periodic reports covering urgent matters.

The school nurses are doing very valuable work. Their energies might be conserved, and even more effective work would be done, if the objectives of the nursing service were better defined, and if there were more systematic guidance and supervision of the nurses. The mutual responsibility of nurses, principals, and teachers should be more clearly defined. It is desirable ultimately that there should be a nurse in every school.

The director of medical inspection, under definite regulations, should be responsible for the hygiene of school buildings.

The respective duties and responsibilities of the medical inspector, nurses, principal, teachers, and janitors should be defined. The director should be required to report promptly and accurately upon urgent matters, and the board should lay upon itself the duty of acting promptly upon his recommendations.

SUBNORMAL AND HANDICAPPED CHILDREN A SPECIAL PROBLEM.

At present there is no provision for the special education of subnormal and handicapped children, such as anemic and tubercular children, the speech defectives, the cripples, the deaf, the semiblind, and the mental subnormals. A careful survey should be made under the direction of the medical inspector to determine the number of children requiring special education. The nutrition classes should be increased to include malnourished children.

5. The experimental work of the nurses in health teaching should be encouraged and developed. The nutrition classes, both formal and informal, the health talks given by the nurses in connection with their periodic inspections, the inclusion of the weight record in the pupil's monthly report and other methods are stimulating interest in health and the practice of health habits by pupils. An effective program of health teaching may be developed through the leadership of the nurses. It must be recognized, however, that health teaching is not an exclusive function of the nurses. On the contrary, it is an essential part of the work of every teacher. Time should be provided in the schedule, and all teachers should be prepared for this work.

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SPECIAL PROBLEMS OF THE HIGH SCHOOL.

6. The administrative responsibility of the principal of the high school should be clearly defined. There should be clear and specific regulations governing his responsibility to the superintendent, and his relationship with the director of physical education medical inspector, supervisor of nurses, and the director of home economics.

The present plan for administration of physical education including athletics should be maintained and strengthened.

The physical-training program in the high school, though correct in principle, should be modified on account of unfavorable physical facilities and the exigencies of the program. This is especially true with respect to the girls. If possible, reorganize the program so as to provide two double periods a week for each class instead of five single periods and place all physical-training classes in the two periods just prior to the noon recess and the two periods just prior to the close of school. The loss of the daily period of exercise would be compensated by the better observance of hygienic considerations.

Put into effect the recommendation of the director of physical education for the reconstruction for the boys' locker rooms, toilets, and shower baths. Study carefully the matter of providing better facilities for the girls.

There is no prescribed health teaching for the boys. Some incidental instruction is given in connection with physical training. This should be developed and systemized. For the girls, health instruction is involved in three required subjects—physical training, home economics, and home nursing. Health teaching in a high school is necessarily a divided responsibility. The special part to be played by each of these agencies should be worked out, and a coordinated program adopted. Furthermore, there should be some plan devised whereby the composite program may be carried out with mutual understanding and cooperation.

IX. HOME ECONOMICS.

Home economics instruction is well established in the white schools, and conditions are favorable for continued development. In accordance with best practice, special teachers are employed, special rooms and equipment are provided, and the supervisor has opportunity and authority for supervision; hence, a united and well-organized staff of teachers.

WEAKNESSES IN PRESENT SCHEME.

(1) The course of study is too narrow; insufficient attention given to problems of food and clothing in the home and relative to home budgets, home sanitation, personal accounting, social significance of the home and home making.

(2) The course of study is uniform throughout the city, and hence no special consideration is given to varying home conditions, needs, and environment.

(3) The time allotment in grades 5 to 8, inclusive, is inadequate.

(4) The work suffers from the complete lack of handwork in the earlier grades.

(5) Special attention should be given to home economics instruction for over-aged girls in grades below the sixth.

(6) The course in home nursing as now given in ninth grade should be modified so as to emphasize conditions of health rather than of illness and disease, and amount of lecture work should be materially reduced.

(7) Food work should be carried beyond individual quantities and recipes, and connected more vitally with home problems.

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(8) Sewing problems should be more varied, interesting, and adapted to pupil and home needs.

(9) Walking distances between schools and home economics centers are too great in some cases.

(10) The equipment is not sufficiently varied.

(11) Storage facilities for home economics materials and supplies are badly needed.

(12) Rooms are needed for instruction in various phases of home management.

(13) There is a singular absence of illustrative and reference material.

(14) Laboratories are unattractive.

(15) Teachers' schedules require much useless travel about the city.

(16) School lunch rooms are badly needed, and should be under the supervision of the home economics department.

(17) Home economics instruction has too little practical outcome in the lives and habits of the pupils. There should be an adviser of girls, cooperating closely with the home economics department.

(18) Special provision should be made for children suffering noticeably from malnutrition.

SPECIAL IMPORTANCE OF HOME ECONOMICS IN THE COLORED SCHOOL.

Home economics in the colored school has many additional handicaps. The room in which it is taught is not suitable for the work; the equipment is poor and inadequate; the arrangement of equipment is inconvenient; the teaching force is insufficient, even though the pupil enrollment is small.

Many Negro children are retarded; the student mortality is high; the occupations open to colored girls are limited almost entirely to household work of some kind, or to work in industries derived from household activities; hence, the home economics courses should be especially well organized, the equipment should be good and approach good home conditions, and the teaching vigorous. Additional time should be scheduled for home economics for colored girls.

The present attempt to furnish hot lunches should be encouraged and special provision made for serving hot food.

Until such time as a new building is secured for the colored school, the home economics department should be moved into a portable building, which, probably, should be located above the present building. This portable building should be well equipped and supplied with modern household equipment, such as should be found in American homes.

X. MANUAL TRAINING AND VOCATIONAL EDUCATION.

The Wheeling schools are to be commended for the splendid work which is being done in manual training and vocational training within the limits thus far set us. Evidence of a praiseworthy professional spirit is found in the weekly meetings of the supervisor and the entire staff enrolled in an extension course of study and discussion under the auspices of the State university.

THE NEXT STEPS FORWARD.

(1) Among the improvements to be made probably the first should be to plan a scheme of handwork for all boys and girls, beginning with the lowest grade, and coordinated with the shopwork, drafting, and home economics of the upper elementary and high-school grades.

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(2) The problems and projects now in use are in some cases not well adapted to the interests and capacities of the boys.

(3) A splendid variety of shop experiences is available in the high-school building. Few cities in Wheeling's class offer more. Nevertheless, the shops are badly crowded. If the high-school attendance were as large as it should be these facilities would be wholly inadequate.

(4) The adoption and carrying out of a junior high school program will make possible the establishing of additional centers offering equal variety to greatly increased numbers of pupils.

(5) The department already has the beginnings of equipment for additional shops (machine shop, printing), which can not be utilized until more space is available.

(6) Provision should be made as soon as possible for a shop for automobile mechanics.

PART-TIME CLASSES NEEDED.

(7) As soon as facilities can be provided steps should be taken to establish a scheme of part-time classes for employed boys and girls. The preparation of plans and the immediate direction of this work may well require one-half or more of the time of one person.

(8) A serious weakness in the present situation is the lack of clearly defined relationships between this department and the school system as a whole, and between the special teachers and the school principals. This should all be cleared up in the general reorganization of the school system discussed elsewhere.

(9) In general, the special teacher should be responsible to the principal in matters of discipline, program, disposition of pupils, use of building, etc., and responsible to the supervisor in matters of methods of instruction, content of course of study, etc. Cooperation, however, is what is needed.

(10) One of the most difficult places to fill in the school system is that of the special shop teacher, which requires all the teaching ability and knowledge of child development that any other teaching position does, and in addition demands the mastery of at least the fundamentals of some technical field, as woodworking, printing, pottery, etc. The teaching staff in Wheeling compares favorably with that of other cities, but needs strengthening on the side of professional preparation and teaching skill. The study class, referred to above, if properly encouraged, should do more to improve conditions in this respect.

(11) Provision should be made for more definite vocational guidance service for boys and girls who need it, and for sympathetically following up all boys and girls in their after-school careers, whether they graduate or not.

CLOSER COORDINATION WITH REGULAR SCHOOL WORK NEEDED.

(12) A more sympathetic attitude toward manual training and vocational work on the part of teachers and principals might result after a more careful consideration of the small proportion of children who complete the school work as now laid down, and who go on to high school and college, and the reasons therefor.

(13) There is at present too little understanding of each other's work by both regular and special teachers and almost no vital connection.

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XI. ART EDUCATION.

DEPARTMENTAL TEACHERS RECOMMENDED.

(1) Change the present system of supervising the grade teacher to one of special teachers under the departmental system. One special teacher of art can take care of 16 grade rooms, allowing 2 lessons per week of 40 minutes each, and produce a more acceptable type of work than can be hoped for with supervision.

(2) Employ an art teacher for the high school who would be responsible for the teaching in the departmentalized grade rooms, or—

ALTERNATE PLAN POSSIBLE.

While keeping the present arrangement, make more effective supervision of art through:

(1) The supervisor of art in the grades should supervise and not teach.

(2) A printed schedule of the supervisor's visits should be sent in advance to each teacher and principal.

(3) This schedule should be followed.

(4) The lesson should be given on schedule time by the grade teacher without waiting for the supervisor.

(5) Lessons completed since the supervisor's last visit should be ready for inspection.

(6) The lesson should proceed in charge of the grade teacher, unless special help is needed.

(7) A schedule of teachers' meetings should be published in September.

(8) The supervisor of drawing should be informed as to the content of the other school subjects.

(9) Keep a card index record of the talented pupils as they are discovered in the grades.[3]

(10) Raise the standard of the grade teacher:

(*a*) Employ only such teachers as have had during the normal-school course training in art and art teaching.

(*b*) Ask that a certain number of teachers now in service take summer-school work in art and the methods of teaching art.

(*c*) Require attendance at teachers' meetings conducted by the supervisor.

(11) Employ a teacher of art for the seventh, eighth, and ninth grades and high school.

(12) Employ a supervisor of industrial arts for the first five grades.

FINE ARTS COURSES FOR THE HIGH SCHOOL.

(1) Introduce the course in the ninth grade.

(2) Make provision for at least three different courses of art in the high school:

(*a*) General course (one or two years): Art appreciation and history. Minimum amount of studio practice work in color, design, crafts, art photography, picture study, and history of art. For girls, the work in design should be applied to the home and the person; for boys, it should connect with the manual training and pottery departments.

(*b*) Elementary drawing: Drawing in pencil and charcoal from objects. Lettering—this course should attract the students who will enter the normal schools and the teaching profession.

[3] This system of studying the progress of students of unusual ability has recently been put in force in the Pittsburgh public schools by Mr. James C. Boudreau, supervisor of art.

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(c) Advanced drawing: Charcoal, poster design, illustration, title-pages, headings for the school publications. This course for future art students only.

The first year that an art course is offered it may be well to begin with the general course, which should, because of its scope, attract all students interested in the subject.

A CIRCULAR OF INFORMATION WOULD BE HELPFUL.

(1) A printed course of study in art education should be prepared, containing information as to:

(a) Psychology of the subject.
(b) Scope and aims in public school system: Appreciation, expression.
(c) Standards of attainments.
(d) Methods of presentation.
(e) References to standard texts.
(f) Supplies and materials.

(2) Copies of these outlines should be furnished to each principal, as well as to each teacher.

(3) Illustrated charts showing the progressive steps of type lessons should be placed in some building or room centrally located in the city for the use of the grade teachers.

INFLUENCE OF THE ART DEPARTMENT ON BUILDINGS AND GROUNDS.

(1) Employ expert advice on the subject of interior and exterior decoration:

(a) The selecting of color for the walls of the rooms, halls, and corridors, with special attention to light and durability as well as color.

(b) Place in each classroom bulletins or display boards to be used in exhibiting class work in penmanship, writing, arithmetic, drawing, etc. Through teachers' and principals' meetings, formulate definite rules consistent with good design to govern the use of such boards. and thus prevent a haphazard pinning of papers and pictures to any available woodwork.

(c) Supply each classroom with a few pictures appropriate to the grade and age of the pupils, and eliminate such pictures as are too small to be easily seen by the majority of the class. The principal of the building, the supervisor of art, and the grade teachers should work in harmony to secure the best for the building, and work out a scheme for decorating the corridors with the classroom work of exceptional pupils.

(d) Supply aisle boards for the display of groups of objects for drawing.

(e) Children in the grades should be supplied from the school funds with water-color boxes and brushes.

(2) Place in each building a small library of books on art and on art education.

ART EDUCATION AND THE COMMUNITY.

(1) Secure exhibitions of original examples of fine and industrial arts work and arrange for classes to make special trips to the exhibitions under the guidance of the grade teachers.

(2) Pictures of examples of architecture, sculpture, and paintings now in Wheeling should be made available for study.

(3) Cooperation of the teachers in the grades of bench work, pottery, domestic science, principals of the schools, and the librarian should be sought to perfect a more solid school organization.

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XII. TANGIBLE RESULTS OF THE SURVEY.

At least two definite actions of the board of education, growing out of consideration of the recommendations of the survey report, may be recorded:

REORGANIZATION OF THE BOARD OF EDUCATION.

At a meeting of the board held March 29, 1921, a series of resolutions proposing amendments to the legislation under which the Wheeling public schools are now operating were adopted, in accordance with which the number of members would be reduced from 21 to 5, effective in June, 1923, the earliest possible legislative date at which the changes can be made.

On March 30, 1921, the president of the board of education wrote to the Bureau of Education, as follows:

After a series of meetings and conferences the board finally passed the amendments to the bill prepared by the Rotary Club, Kiwanis Club, and chamber of commerce, which provide for the election of five commissioners at large at the city election of 1923, the term to be six years. At the first election two will be elected for six years, two for four years, and one for two years, and the election is to be nonpartisan and candidates arranged in alphabetical order. The other provision is that the superintendent shall appoint all principals, teachers, and other employees of the board, subject to confirmation by the board.

At a meeting of the joint committee of the above organizations held yesterday these changes were approved unanimously by the members present, so that the bill as now amended goes to the legislature without contention.

QUALIFICATIONS OF TEACHERS.

On Friday evening, July 22, 1921, the board of education adopted the following resolutions:

In order to carry into effect the recommendation of the survey commission with respect to raising the standards of qualifications of the teaching staff, the board of education of the school district of Wheeling hereby adopts the following resolutions:

Resolved, (1) That hereafter all principals, supervisors, directors, teachers, librarians, nurses, clerks, janitors, and other employees (except the clerk of the board) shall be employed, promoted, demoted, transferred, retired, or dismissed, exclusively upon the written recommendation of the superintendent of schools, subject to the approval of the board.

(2) That after July 1, 1921, no new teacher or supervisor shall be employed for service in the high schools who is not a graduate of an accredited four-year college or university course, except that teachers or supervisors in special technical subjects may offer successful experience in the vocations related to such subjects in lieu of two years of such college or university course, provided two years of approved professional training beyond high-school graduation be offered.

(3) That after July 1, 1921, no new teacher or supervisor shall be employed for service in the elementary schools who is not a graduate of an approved normal school or teachers' college course consisting of two years' work beyond graduation from a standard high school, or, in the case of special trade subjects, who has not had the equivalent of two years of professional preparation for teaching or supervising the subject in question.

(4) That after July 1, 1921, to be eligible for a new appointment as principal of a school a candidate should meet the minimum requirements herein set forth, and in addition should have had not less than five years' successful experience in teaching, and have completed an approved course of professional preparation in school administration and supervision.

(5) That in the cases of all principals, teachers, and supervisors who were employed in the Wheeling public schools during the year ended June, 1921, and reappointed for the ensuing year, the application of the minimum requirements as herein set forth be waived until September 1, 1927; and that the superintendent be directed to report on the professional qualifications of all principals, teachers, and supervisors at the regular meeting of the board in September of each year.

(6) That after July 1, 1925, no person shall be employed for substitute service who does not meet with the minimum qualifications of regular teachers as set forth in this resolution.

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DEPARTMENT OF THE INTERIOR
U. S. BUREAU OF EDUCATION

BULLETIN, 1921, No. 29

MONTHLY RECORD OF CURRENT EDUCATIONAL PUBLICATIONS

SEPTEMBER, 1921

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MONTHLY RECORD OF CURRENT EDUCATIONAL PUBLICATIONS.

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CONTENTS.—Educational history and biography—Current educational conditions—Educational theory and practice—Educational psychology; Child study—Educational tests and measurements—Special methods of instruction—Special subjects of curriculum—Kindergarten and primary school—Rural education—Secondary education—Teacher training—Teachers' salaries and professional status—Higher education—School administration—School management—School buildings and grounds—School hygiene and sanitation—Sex hygiene—Physical training—Play and recreation—Social aspects of education—Child welfare—Religious and church education—Manual and vocational training—Vocational guidance—Home economics—Commercial education—Legal education—Medical education—Civic education—Americanization—Education of service men—Education of women—Negro education—Education of deaf—Exceptional children—Education extension—Libraries and reading—Bureau of Education: Recent publications.

NOTE.

The record comprises a general survey in bibliographic form of current educational literature, domestic and foreign, received during the monthly period preceding the date of publication of each issue.

This office can not supply the publications listed in this bulletin, other than those expressly designated as publications of the Bureau of Education. Books, pamphlets, and periodicals here mentioned may ordinarily be obtained from their respective publishers, either directly or through a dealer, or, in the case of an association publication, from the secretary of the issuing organization. Many of them are available for consultation in various public and institutional libraries.

Publications intended for inclusion in this record should be sent to the library of the Bureau of Education, Washington, D. C.

During July and August the record was not published. The present number accordingly follows in immediate sequence that for May–June, 1921.

EDUCATIONAL HISTORY AND BIOGRAPHY.

986. **Burnham, William H.** Horace Mann. School and society, 14:109–15, September 3, 1921.

987. **Finegan, Thomas E.** Free schools; a documentary history of the free school movement in New York state. Albany, The University of the state of New York, 1921. 682 p. plates. 8°. (Vol. I of the fifteenth annual report of the State education department.)

Not a systematic history of the development of public education in New York state, but a collection of valuable source material on the subject which is here made accessible to readers and students.

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988. **Finegan, Thomas E.** The township system. A documentary history of the endeavor to establish a township school system in the state of New York from the early periods through the repeal of the township law in 1918. Albany, The University of the state of New York, 1921. 1693 p. plates, tables. 8°. (Vol. I of the fourteenth annual report of the State education department.)

989. **Fitzgerald, Virginia.** A Southern college boy eighty years ago. South Atlantic quarterly, 20:236–46, July 1921.

Student life at Randolph-Macon college, Virginia, early in the last century.

990. **Indiana university.** Indiana university, 1820–1920. Centennial memorial volume. Bloomington, Ind., Indiana university, 1921. 345 p. 8°. (Indiana university bulletin. vol. xix, no. 2, February 1921)

Contains: 1. D. D. Banta: History of Indiana university, p. 9–113. 2. J. G. Schurman: The American university—today and tomorrow, p. 117–40. 3. A. S. Warthin: The university medical school and the state, p. 157–62. 4. E. P. Lyon: Graduate medical education—experience with the Minnesota plan, p. 163–77. 5. S. M. Ralston: The Thomas Jefferson theory of education, p. 179–91. 6. Evans Woollen: The state university and its service to business, p. 193–201. 7. E. A. Birge: The state university at the opening of the twentieth century, p. 203–22. 8. Paul Shorey: The functions of the state university, p. 223–41. 9. J. R. Angell: The obligation of the state toward scientific research, p. 243–56. 10. Roscoe Pound: The future of legal education, p. 257–72. 11. R. A. Millikan: A present need in American professional education, p. 273–79. 12. Sir R. A. Falconer: The spiritual idea of the university, p. 293–304.

991. **Slosson, Edwin E.** The American spirit in education; a chronicle of great teachers. New Haven, Yale university press [etc.] 1921. x, 309 p. plates. 8°. (The chronicles of America series, vol. 33)

CONTENTS.—1. School days in early New England.—2. Schools in New Netherland.—3. Schools of the middle and southern colonies.—4. The colonial college.—5. Franklin and practical education.—6. Jefferson and state education.—7. Washington and national education.—8. Schools of the young republic.—9. Horace Mann and the American school.—10. De Witt Clinton and the free school.—11. The westward movement.—12. The rise of the state university.—13. Catholic education in America.—14. The rise of technical education.—15. The Morrill act and what came of it.—16. Women knocking at the college door.—17. The new education.—18. The university of today.

CURRENT EDUCATIONAL CONDITIONS.

GENERAL AND UNITED STATES.

992. **Bonner, H. R.** Waste in education. American school board journal, 63:33–35, 124, July 1921.

Discusses irregular attendance, repetition of school work, and withdrawal from school.

993. **Capen, Samuel Paul.** The government and education. Educational review, 62:127–33, September 1921.

Dr. Capen here says that the creative interests of the nation—industrial production, scientific inquiry, social welfare, and education—should be clearly identified from the defensive and conservative interests, which are fundamentally different. The creative interests flourish when supplied with knowledge, intellectual guidance, leadership, and languish when subjected to control or coercion.

994. **Furst, Clyde.** The educational utility of the great foundations. Educational review, 62:98–106, September 1921.

The writer concludes that "the adequate resources, able guidance, and skilled workers of the foundations make possible a freedom and independence, a comprehensiveness and continuity, not otherwise attainable, and that these characteristics not only meet real public needs, but also encourage and aid other efforts for the public welfare."

995. **Georgia illiteracy commission.** Report . . . to the General assembly of the state of Georgia for the year ending December 31, 1920. [Atlanta, Ga., 1921] 17 p. illus. 8°.

With this is bound: Lessons in reading, writing, arithmetic, for special school work in Georgia; prepared by M. L. Brittain. Atlanta, Ga., 1920. 24 p.

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996. **Miller, Paul G.** Education in Porto Rico: problems and progress. American review of reviews, 64:301–10, September 1921.

In this article, the commissioner of education of Porto Rico gives a comprehensive account of current educational conditions in the island.

997. **Rolfe, Alfred G.** What do boys know? Atlantic monthly, 128:59–61, July 1921.

Discusses the results of information tests given to boys in a large preparatory school.

998. **Tigert, John J.** Eradication of illiteracy. School life, 7:1–2, 12, September 1921.

An address delivered before the Illiteracy section of the National education association, Des Moines, July 1921.

999. **Vincent, George E.** The Rockefeller foundation. A review for 1920; the program for 1921. New York, 1921. 47p. illus. 8°.

1000. **Yanes, Francis J.** Education section of the Pan American union. Bulletin of the Pan American union, 53:281–84, September 1921.

The education section of the Pan American union promotes the exchange of students and professors between Latin-American countries and the United States and fosters other educational relations with these countries.

FOREIGN COUNTRIES.

1001. **Champenois, Julien J.** University reform in France. Educational review, 62:107–15, September 1921.

1002. **Fleming, Daniel Johnson.** Schools with a message in India. London, New York [etc.] Humphrey Milford, Oxford university press, 1921. 209p. plates. 12°.

A contribution to the first-hand information available on the problems of popular education in India. The author, Prof. Fleming, of the department of foreign service of Union theological seminary, New York, was American representative on the commission on village education in India, which was sent abroad by the combined missionary societies of Great Britain and North America during the year ending June, 1920.

1003. **Koritchoner, Ida.** Forces in German education. Survey, 46:596–97, August 16, 1921.

Constructive reforms in German education discussed. Pedagogical experiments analyzed.

1004. **Leclère, Léon.** L'enseignement supérieur en Belgique (1919–1921). Revue internationale de l'enseignement, 41:237–43, July-August 1921.

1005. **Ling, Ping.** The present educational conditions in China. Pedagogical seminary, 28:116–38, June 1921.

Writer says that modern education in China is still in its infancy, as the problem of providing educational facilities for a population of 400,000,000 is so immense and complicated.

1006. **Mackenzie, A. H.** State examinations in Scottish schools. Calcutta, Superintendent government printing, 1921. 3 p. l., 45 p. 8°. (Bureau of education, India. Pamphlet no. 9.)

1007. **Montgomery, James A.** Jerusalem as an educational center. Menorah journal, 7:103–7, June 1921.

1008. **Orb, William.** A recent departure in education in Germany. School life, 6:1–2, May 15, 1921.

People's high schools have been established to develop the habit of independent thought—to teach how to think and to give the material for thought.

1009. **Roques, P.** La réforme scolaire en Allemagne. Revue universitaire, 30: 101–14, July 1921.

1010. **Roudière, Louise.** Quelques réflexions au sujet de l'enseignement du français. Revue pédagogique, 79:11–24, July 1921.

1011. **Sokolov, Boris.** The tragedy of child life under bolshevism. Current history, 14:664–67, July 1921.

Educational and social condition of children under the Bolshevist régime.

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1012. **Špišek, Ferd.** L'enseignement tchéco-slovaque: son passé et son avenir.—I. Revue internationale de l'enseignement, 41:225–36, July-August 1921.
To be continued.

1013. **Stepanek, B.** The spirit of Jan Amos Comenius in the education of the Czechoslovak Republic. School and society, 13:651–54, June 11, 1921.
The identity of ideals of America and the Czechoslovak Republic in the sphere of education is a guarantee that the bonds of friendship which unite the two countries will be increasingly strengthened.

1014. **Zentralinstitut für erziehung und unterricht, Berlin.** Die deutsche schulreform; ein handbuch für die reichsschulkonferenz. Leipzig, Quelle & Meyer [1920] xii, 251, 68p. 8°.
Outlines the topics to be discussed at the German educational conference (reichsschulkonferenz) of 1920.

1015. ——— Die reichsschulkonferenz in ihren ergebnissen. Leipzig, Quelle & Meyer [1920] 226p. 8°.
Sketches concisely the main results of the German educational conference (reichsschulkonferenz) held June 11–19, 1920, to consider measures of reform for the German schools.

EDUCATIONAL THEORY AND PRACTICE.

1016. **Kilpatrick, William H.** The meaning of method. Journal of educational method, 1:14–19, September 1921.

1017. **Miller, Dickinson S.** The Antioch idea. Nation, 113:263, September 7, 1921.
An appreciation of the new plan of education inaugurated at Antioch college, Yellow Springs, Ohio, by President Arthur E. Morgan.

1018. **Sharp, Dallas Lore.** Education for authority. Atlantic monthly, 128:13–21, July 1921.
Writer says that "education for authority must both precede and continue with conventional education; equal place made for chores, great books, simple people, and the out-of-doors, with that which is made for texts, and recitations, and schoolroom drill."

EDUCATIONAL PSYCHOLOGY; CHILD STUDY.

1019. **Baldwin, Bird T.** The physical growth of children from birth to maturity. Iowa City, The University, 1921. 411 p. illus., charts, tables. 8°. (University of Iowa. Studies in child welfare, vol. 1, no. 1. June 1, 1921.)
Annotated bibliography: p. 320–402.
Presents data and results applicable to the formulation of standard norms in physical growth of children, with a view to establishing a basic science for allied investigations in mental, educational, social, and moral development and clinical studies in nutrition.

1020. **Freeland, George E.** A year's study of the daily learning of six children. Pedagogical seminary, 28:97–115, June 1921.
In the plan of study for this test typewriting was chosen; the touch system, with the keyboard entirely hidden from sight was adhered to.

1021. **Munson, Edward L.** The management of men; a handbook on the systematic development of morale and the control of human behavior. New York, H. Holt and company, 1921. xiii, 801 p. diagrs. 8°.
Gives the results of the experience of the chief of the Morale branch of the general staff of the United States army. While the book is written from the military standpoint, perhaps industrial morale will be the greatest field of usefulness of the principles brought out.

1022. **Packer, Paul C.** *and* **Moehlman, Arthur B.** A preliminary study of standards of growth in the Detroit public schools; with an introduction by Stuart A. Courtis. Detroit, Mich., Board of education, 1921. 46 p. diagrs., tables. 8°. (Detroit educational bulletin. Research bulletin, no. 5. June 1921.)

1023. **Tomkins, Ernest.** Stammering studies. Pedagogical seminary, 28:161–70, June 1921.
A discussion of J. M. Fletcher's "An experimental study of stuttering," published in the American journal of psychology, April, 1914, v. 25, which the writer says excels any contribution on the subject of stammering either in this country or abroad.

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EDUCATIONAL TESTS AND MEASUREMENTS.

1024. **California. University. Department of education.** Measuring classroom products in Berkeley. Sections 1 and 2. Directed by Cyrus D. Mead. Berkeley, University of California press, 1921. 108 p. tables, diagrs. 8°. (University of California. Department of education. Bureau of research in education. Study no. 1, May 1, 1921)

Scientific studies of results in the Berkeley, Calif., schools in writing, spelling, reading, arithmetic, English composition, and geography.

1025. **Colvin, Stephen S.** The use of intelligence tests. Educational review, 62:134–48, September 1921.

Continues the account of Dr. Colvin's investigations with intelligence tests at Brown university, begun in the Educational review for May, 1920. Both articles show the results from the Colvin tests in comparison with the Thorndike and Army tests.

1026. **Cummins, Robert A.** Educational measuring sticks and their uses. American school board journal, 63:33–35, August 1921.

1027. **Estabrook, Arthur H.** The biological bearing of army mental tests. Social hygiene, 7:279–84, July 1921.

1028. **Haggerty, M. E.** Haggerty reading examination. Manual of directions for sigma 1 and sigma 3. Yonkers-on-Hudson, N. Y., World book company, 1921. 48 p. 12°.

1029. **Kelley, Truman L.** *and* **Terman, Lewis M.** Dr. Ruml's criticism of mental test methods. Journal of philosophy, 18:459–65, August 18, 1921.

An answer to a criticism by Dr. B. Ruml, in the Journal, vol. 17, p. 57–61. Dr. Ruml characterized the results of mental tests as "astonishingly meagre in theoretical value."

1030. **Madsen, I. N.** Educational research and statistics; interpreting achievement in school in terms of intelligence. School and society, 14:59–60, July 30, 1921.

Shows three important sources of error in interpreting the results of teaching in a given class in terms of educational tests alone.

1031. **Thomson, Godfrey H.** A rating scale for teaching ability in students. Journal of experimental pedagogy (London) 6:76–82, June 1921.

Discusses the value of the American army rating scale and its applicability to English collegiate conditions.

1032. **Yerkes, Robert M.,** *ed.* Psychological examining in the United States army. Washington, Government printing office, 1921. vi, 890 p. plates, charts, tables. 4°. (Memoirs of the National academy of sciences, vol. XV.

This official report of the Division of psychology of the Office of the Surgeon general, U. S. army, gives a complete account of the history, methods, and results of psychological examining in the army.

SPECIAL METHODS OF INSTRUCTION.

VISUAL INSTRUCTION.

1033. **Eastman, Dolph.** The public school as the neighborhood movie theater. Educational film magazine, 5:8–9, 22, 24, June 1921.

As the screen gradually becomes the people's teacher, the public school and not the church should be the movie unit of the community.

1034. **Perkins, F. W.** The United States Agriculture Department movie work. Educational film magzine, 6:3, 5, August 1921.

Resumé of its many film activities. More than 130 subjects and 600 prints are in active circulation, which are being distributed to schools, colleges, churches, and other nontheatrical institutions.

1035. **Sawarkar, D. S.** Visual instruction in Baroda. Calcutta, Superintendent government printing, 1920. 2 p. l., 3p. 8°. (Bureau of education, India. Pamphlet no. 10.)

1036. **Vaughan, William J.** Combined churches give community movie shows. Educational film magazine, 6:9, August 1921.

Methodist and Presbyterian members get together in a village of 1,300 (New Providence, N. J.) and organize a community service organization.

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OTHER METHODS.

1037. Every child his own educator. "Teacher's world" interview with the originator of the Dalton laboratory plan. Teacher's world (London) 25:569, 571, July 6, 1921.

This article presents a portrait of Miss Helen Parkhurst; also an interview with her as originator of the Dalton plan.

1038. **Knappen, Theodore M.** Mastering the arts of life, as exemplified in a new school. Atlantic monthly, 128:87–96, July 1921.

Describes the work of the Moraine Park school at Dayton, Ohio.

1039. **Parkhurst, Helen.** The Dalton plan. Times (London) Educational supplement, 11:297–98, 315–16, 321–22, 333–34, 347, 357–58, July 2, 9, 16, 23, 30, August 6, 1921.

The Dalton-laboratory plan described in this series of six articles is a scheme of educational reorganization applicable to the school work of pupils from 8 to 17 years of age in the lower and secondary schools. The plan was first tried as an experiment in an ungraded school for crippled children; later it was tried successfully in secondary day schools. The name Dalton is that of the American city where the plan was first attempted as an experiment in a public secondary school.

SPECIAL SUBJECTS OF CURRICULUM.

SPELLING.

1040. **Weseen, Maurice H.** Can spelling be taught? American education, 24: 444–49, June 1921.

The conclusion of the article is that it would be presumptuous to claim that spelling can be taught, but it is certain it can be learned.

ENGLISH AND COMPOSITION.

1041. **Hopkins, Edwin M.** Should English teachers teach? Education, 42:12–18, September 1921.

Discusses the overloading of English teachers with work not properly belonging to their department.

1042. **Hosic, James F.** An experiment in cooperation. I—Launching the project. Journal of educational method, 1:20–23, September 1921.

First article of a series, describing an experiment in English teaching in selected public schools of Chicago.

1043. **Tomkinson, W. S.** The teaching of English; a new approach. Oxford, Clarendon press, 1921. 229p. 12°.

ANCIENT CLASSICS.

1044. **Coolidge, Calvin.** The classics for America. School life, 7:1, 15–16, September 1921.

An address delivered before the American classical league, at Philadelphia, July 7, 1921.

1045. **Houston, Percy Hazen.** The humanist and progress. North American review, 214:401–9, September 1921.

As a moralist and critic, the humanist strives to create a large body of clear-thinking men, who in turn may exert an even larger influence upon the current of events. That end he perceives can best be brought nearer through the medium of a rightly directed system of education, wherein the humanities may find again a central place.

1046. **Showerman, Grant.** Science and humanism. School and society, 14: 85–87, August 20, 1921.

MODERN LANGUAGES.

1047. **Palmer, Harold E.** The principles of language-study. Yonkers-on-Hudson, N. Y., World book company, 1921. 186 p. 12°.

Discusses the methods by which a foreign language may successfully be acquired, and tells for what ends our spontaneous and our studial capacities should be employed in this connection.

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MATHEMATICS.

1048. **Kellogg, O. D.** A decade of American mathematics. Science, n. s. 53:541–48, June 17, 1921.

A sketch of the progress of mathematics in this country during the decade.

SCIENCE.

1049. **Lovelace, B. F.** Some present aspects of chemistry in the United States. Science, n. s. 54:139–46, August 19, 1921.

Emphasizes the demand for chemists for the industries, and the necessity of educating men for this work in the universities.

1050. **Wenrich, D. H.** The courses in general zoology: methods of teaching. Science, n. s. 54:120–23, August 12, 1921.

Various methods of teaching described. Emphasizes objective studies handled in the form of problems based upon the inductive method. Work in University of Pennsylvania cited.

GEOGRAPHY.

1051. **Selwood, E. H.** The first area in local geography. Journal of experimental pedagogy (London) 6:89–99, June 1921.

Methods of teaching geography in schools of Birmingham, England.

1052. **Visher, Stephen S.** Aids to teaching climate. Geographical teacher (London) 11:45–51, Summer, 1921.

HISTORY.

1053. **Prescott, Della R.** A day in a colonial home, ed. by John Cotton Dana. Boston, Marshall Jones company, 1921. xiv, 70p. plates, illus. 12°.

A story of colonial life as illustrated by a colonial kitchen established in the Newark, N. J., Museum for the instruction of school children and others. Directions are given for building a similar kitchen in school, library, or museum.

1054. **Wells, H. G.** History for everybody: a postscript to "The Outline of history." Yale review, 10:673–704, July 1921.

Also in Fortnightly review, 108:887-910, June 1921.

Mr. Wells here vigorously defends his Outline against criticisms coming from various quarters. Regarding the study of general history as a necessary part of any properly conceived education, he urges its introduction into the schools and the preparation of a textbook in the subject adapted to school use.

Ginn and company, of Boston, Mass., have just undertaken to meet this need by publishing a new text, "A General history of Europe," by J. H. Robinson and J. H. Breasted, which aims to present an ordered, general account of man's career on earth in one volume without sacrificing historical unity.

MUSIC.

1055. **Beattie, J. W.** The music supervisor and the public. School music, 22:17, 20–25, May 1921.

It is by convincing himself of the value of music and then demonstrating to the public his beliefs that the music supervisor will be accorded the prominence due him.

1056. **Jaques-Dalcroze, Emile.** Rhythm, music and education; tr. from the French by Harold F. Rubinstein. New York and London, G. P. Putnam's sons, 1921. xvii, 334p. musical sup., 16p. front. (port.) plates. 8°.

Contains a series of papers written by Jaques-Dalcroze at various periods from 1898 to 1919, illustrating the development of his views on eurhythmics, with author's preface for this edition.

1057. **Wilson-Dorrett, Olive B.** Language of music interpreted from the child's viewpoint. Yonkers-on-Hudson, N. Y., World book company, 1921. xxi 296p. music. 12°. (Play school series, ed. by C. W. Hetherington.)

Shows how to teach the written musical language to children by means of colors and by th use of the play impulse in games, etc.

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KINDERGARTEN AND PRIMARY SCHOOL.

1058. **Cooper, Nellie.** How to teach the primary grades. Chicago, A. Flanagan company, 1920. 304p. 12°.

1059. **Gesell, Arnold.** Kindergarten control of school entrance. Kindergarten primary magazine, 33:295–98, June 1921.
Given before the International kindergarten union at Detroit, Mich., May, 1921.

1060. **Rasmussen, Vilhelm.** Child psychology. London, Copenhagen [etc.] Gyldendal [1920] 3v. 12°.
CONTENTS.—I. Development in the first four years.—II. The kindergarten child; its conception of life and its mental powers.—III. The kindergarten child: thought, imagination and feeling; will and morale.
"Literature": v. 1, p. 165–66; v. 2, p. 137–39.
Translated from the Danish by David Pritchard.

1061. **Sies, A. C.** The significance of movement, interest, and discipline in childhood, education. Kindergarten and first grade, 6:221–25, June 1921.
Study of the motor acts of children.

RURAL EDUCATION.

1062. **Bacon, George W.** The country school—then and now. Survey, 46:585–90, August 16, 1921.
Discusses the financing of the public schools; renaissance of the country school; teachers' salaries, etc. A retrospect of conditions, and a study of conditions to-day in rural schools.

1063. **Fogarty, W. S.** The effectual "stirring up" of a county to consolidate its rural schools. American city, 25:201–4, September 1921.
By the superintendent of Preble county schools, Eaton, Ohio, telling how consolidation has improved the rural schools in his county.

1064. **Reavis, George H.** Factors controlling attendance in rural schools. New York City, Teachers College, Columbia university, 1920. 69 p. 8°. (Teachers college, Columbia university. Contributions to education, no. 108)

1065. **Sargent, C. G.** Consolidated schools of the mountains, valleys and plains of Colorado. Fort Collins, Colo., Colorado agricultural college, 1921. 60p. illus. 8°. (Colorado agricultural college bulletin. series xxi, no. 5, June 1921)

SECONDARY EDUCATION.

1066. **Cleveland. Board of education.** Give yourself a fair start. Go to high school—what it is; why it pays. Cleveland, Ohio, Board of education, 1921. 48p. illus. 8°.

1067. **Rorem, S. O.** Have we done it? Junior high clearing house (Sioux City, Iowa) 1:3–13, March-April 1921.
A review of what has been learned about junior high schools.

1068. **Stout, John Elbert.** The development of high-school curricula in the north central states from 1860 to 1918. Chicago, Ill., The University of Chicago [1921] xi, 322p. 8°. (Supplementary educational monographs, pub. in conjunction with the School review and the Elementary school journal, vol. iii, no. 3, whole no. 15)
Bibliography: p. 292–316.

TEACHER TRAINING.

1069. **Bane, Charles L.** The Wesleyan plan of observation and student-teaching. Training school quarterly, 8:338–41, July–September 1921.
Describes the method of conducting directed observation and supervised student-teaching in the demonstration school of Ohio Wesleyan university, Delaware, Ohio.

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1070. **Cameron, R. G.** An experiment in practice teaching in rural schools. Schooling (Teachers' college, Sydney, N. S. W.) 4:109–17, May 1921.

1071. **Lemon, A. C.** Training teachers for leadership—The responsibility of the higher institutions of learning. Inter-mountain educator, 16:440–44, June 1921.

America's great need is for leadership in things worth while.

1072. **Lietzmann, W.** Fachwissenschaftliche didaktik an der universität. Monatschrift für höhere schulen, 20:155–61, May–June 1921.

1073. **Roberts, Mary M.** Student life at Teachers college. American journal of nursing, 21:782–86, August 1921.

Student life and activities at Teachers college, Columbia university, New York City.

1074. **Wright, Frank L.** The training school. Greeley, Col., State teachers college, 1921. 80p. 12°. (Colorado state teachers college bulletin, ser. xxi, June, 1921, no. 3)

Section six of the Educational survey of Colorado State teachers college.

TEACHERS' SALARIES AND PROFESSIONAL STATUS.

1075. **Beals, E. E.** Men teachers leaving profession for reasons other than financial; some rarely discussed factors which are forcing men out of the teaching profession. American school board journal, 63:39–40, August 1921.

Names considerations of tenure, promotion, and prestige and influence of position as factors which deter men from entering the teaching profession.

1076. **Knight, Frederic B.** *and* **Franzen, Raymond H.** Personnel management of the teaching staff. American school board journal, 63:36–37, July; 43–45, August 1921.

1077. **Luckey, G. W. A.** The sabbatical year or leave of absence of teachers in service for study and travel. School and society, 14:115–20, September 3, 1921.

1078. **National education association. Committee on tenure.** Teachers' tenure. School and society, 14:129–36, September 3, 1921.

Report of the Committee on tenure presented at the meeting of the National education association, Des Moines, Ia., July, 1921, by Miss Charl O. Williams, chairman.

1079. **Ortman, E. J.** Teacher councils. Chicago schools journal, 3:261–66, May 1921.

What the organization is and what it attempts to do.

1080. Teaching versus business. By a college professor. North American review, 214:21–33, July 1921.

Discusses the advantages of the teaching profession.

HIGHER EDUCATION.

1081. **Association of land-grant colleges.** Proceedings of the 34th annual convention, held at Springfield, Mass., October 19–22, 1920. Burlington, Vt., Free press printing company, 1921. 300p. 8°. (J. L. Hills, secretary, University of Vermont, Burlington, Vt.)

Contains: 1. Samuel Avery: Our present college problems, p. 21–28. 2. W. W. Charters: Improvement of college training, p. 28–30. 3. E. T. Meredith: Cooperative relations in agricultural development, p. 32–39. 4. A. C. True: Committee report on improvement of college teaching in vocational subjects, p. 67–79. 5. R. L. Watts: What can be done to improve the teaching methods of the present staff? p. 79–84. 6. E. W. Allen: Effects of the war on research in agriculture, p. 91–96. 7. L. S. Hawkins: Training teachers of vocational agriculture through the land-grant colleges, p. 159–62. 8. A. R. Mann: The opportunity of the land-grant college in the preparation of teachers of vocational and secondary agriculture, p. 162–66. 9. J. M. D. Bell: Cooperation with industries by the Massachusetts institute of technology, p. 167–72. 10. D. S. Kimball: Industrial problems and engineering education, p. 197–202. 11. A. A. Potter: Administration of engineering divisions at land-grant institutions, p. 212–15. 12. Anna E. Richardson: Home-making teachers—training courses, p. 268–74.

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1082. **Andrews, M. B.** How to work your way through college. Greensboro, North Carolina, [J. J. Stone & co.] 1921. 63p. 8°.

1083. **Angell, James Rowland.** The inaugural address of the president of Yale university, June 22, 1921. Yale alumni weekly, 30:1087–89, July 8, 1921.
Also in part in School and society, 14:1–5, July 2, 1921.

1084. **Chamberlin, Thomas C.** Letter from Professor Chamberlin on faculty participation in university government. School and society, 13:691–94, June 18, 1921.

1085. **Conference on methods of college standardization.** Addresses at a conference called jointly by the National conference committee on standards of colleges and secondary schools and the American council on education, held at Washington, D. C., May 6, 1921. Educational record, 2:81–122, July 1921.
Contains: 1. Clyde Furst: Standards in education, p. 85–91. 2. K. C. Babcock: The present standards of voluntary associations, p. 92–99. 3. G. F. Zook: Present standards of state departments of education and state universities, p. 100–3. 4. E. A. Pace: Present standards of the Catholic educational association, p. 104–6. 5. R. L. Kelly: Present standards of Protestant church boards of education, p. 107–13. 6. J. H. Kirkland: Objectives of standardization of higher institutions, p. 116–22.

1086. **Cunliffe, John W.** A union of universities. Forum, 66:42–47, July 1921.
Discusses the aims and activities of the American university union in Europe and the American council on education.

1087. **Hart, Walter M.** The spirit of scholarship. University of California chronicle, 23:237–50, July 1921.
Says that our universities are the great creators and custodians of the spirit of scholarship. Work of the University of California.

1088. **Institute of international education.** Educational facilities in the United States for South African students. Prepared by the Federation of South African students in America. Issued by the Institute. New York, 1921. 23p. double map. 8°. (*Its* Bulletin no. 4. Second series)

1089. ———. Guide book for foreign students in the United States. New York, July 1, 1921. 97p. fold. charts. 8°. (*Its* Bulletin no. 5. Second series)
A concise presentation of the information required by foreign students on the general organization of education in the United States, on undergraduate and graduate work in colleges and universities, on professional education, women's colleges, college life and living conditions, etc. The pamphlet also contains a sketch of the principal foreign student organizations, and a tabular summary of foreign students in the United States.

1090. **Kellogg, Vernon.** The university and research. Science, n. s. 54:19–23, July 8, 1921.
Says that research work and teaching are inseparable from, and indispensable to, each other in a real university.

1091. **Massachusetts agricultural college.** Massachusetts agricultural college in the war. Amherst, Mass., Massachusetts agricultural college, 1921. 203p. front., plates. 8°.

1092. **Merrill, W. A.** The government of universities. University of California chronicle, 23:343–54, July 1921.
Shows the evolution of college and university government in the United States.

1093. **Miller, Dickinson S.** The great college illusion. New republic, 27:101–5, June 22, 1921.
Says that the great college illusion is "the faith that the accumulation of buildings, 'courses,' degrees, and students characteristic of the last 50 years is a progress in education." Criticises college methods and systems.

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1094. **Murchison, Carl.** College men behind prison walls. School and society, 13:633–40, June 4, 1921.

Two per cent of the desperate criminals in three large states are college-trained individuals.

1095. **Payne, A. F.** Merits and defects of present practices of cooperation between universities and industry. School and society, 13:607–13, May 28, 1921.

The close cooperation which exists between the university and agriculture and the other fields of human endeavor is lacking in the relations between universities and industry. A scheme of cooperation is formulated.

1096. **Powell, B. E.** The alarming bigness of our universities. School and society, 13:654–57, June 11, 1921.

The writer calls attention to the difficulties which beset universities and colleges and the evils which have grown up along with them.

1097. **Riggs, Edward G.** Radicalism in our colleges. Forum, 66:197–209, September 1921.

To offset the teachings of the propagandists of radicalism in our colleges, the writer suggests that we should have from the outside world public speakers and writers to contradict by counter-proof the type of speaker now infesting some of the institutions of higher education.

1098. **Thompson, W. O.** The college graduate in modern life. Indiana alumni quarterly, 8:269–85, July 1921.

Commencement address at Indiana university, June, 1921.

Discusses education in general; the college as a center of loyalty to the nation; influence of college graduates in the world of affairs.

1099. **Tufts, James H.** Dr. Angell, the new president of Yale. World's work, 42:387–400, August 1921.

An appreciation of the life and labors of Dr. Angell. Illustrated.

SCHOOL ADMINISTRATION.

1100. **Iowa. Department of public instruction.** Summary of standards and equipment for approved graded and high schools. Better American schools for American children. Rev. by F. A. Welch. Des Moines, State of Iowa, 1921. 61p. 8°.

1101. **Jones, R. W.** School revenues: sources, distribution, limitations. American school board journal, 63:38–41, 123, July 1921.

1102. **Miller, William T.** The danger in novelties. American school board journal, 62:32, 119, June 1921.

Writer advises that novelties be introduced gradually in schools selected to give as many different types of experience as possible.

1103. **Pratt, O. C.** The problem of school finance. Elementary school journal, 21:744–54, June 1921.

1104. **Scholz, Paul H.** The school budget. American school board journal, 63:49–50, 121, August; 38–39, September 1921.

SCHOOL MANAGEMENT.

1105. **McClure, Worth.** Professionalizing the principalship. Elementary school journal, 21:735–43, June 1921.

Paper presents evidence that the present tendency is toward professional ideals and standards.

SCHOOL BUILDINGS AND GROUNDS.

1106. **Burgess, W. R.** Building costs in 1921. American school board journal, 62:37–38, June 1921.

It is the belief of the writer that the general level of building costs has not yet reached its lowest point.

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1107. **California. University. Department of education.** A school building survey and schoolhousing program for Napa, California. Directed by Frank W. Hart. [Berkeley, University of California press, 1921] 64p. tables, charts, map. 8°. (University of California. Department of education. Bureau of research in education. Study no. 2, April 1, 1921)

Presents the facts as to the condition of the Napa school plant at the present time, the immediate need for additional school accommodations, a plan for meeting these needs, a program for future needs, a study of the cost involved, and the community's ability to meet it.

1108. **Morrow, Irving F.** The new high school at Salinas. Architect and engineer (San Francisco) 66:47–58, July 1921.

A description of the new school building at Salinas, Calif., accompanied by plates and plans.

SCHOOL HYGIENE AND SANITATION.

1109. **Blanton, Smiley.** The medical significance of the disorders of speech. Journal of the American medical association, 77:373–77, July 30, 1921.

Among other things emphasizes stuttering and its cure; stuttering among soldier group and school children.

1110. **Dana, Harold W.** Myocardial lesions in school children. Boston medical and surgical journal, 185:228–31, August 25, 1921.

Study based on an examination of public school children in Massachusetts. Says that proof of myocardial insufficiency is often to be found in supposed healthy children.

1111. **Dickson, Frank D.** The effect of posture on the health of the child. Journal of the American medical association, 77:760–63, September 3, 1921.

1112. **Gebhart, John C.** Defective nutrition and physical retardation. Pedagogical seminary, 28:147–55, June 1921.

Describes the work of the New York association for improving the condition of the poor, whose committee on the welfare of school children made an intensive study of defective nutrition in 1907. Work of Child health association and other agencies.

1113. **Halsey, Robert H.** Heart disease in children of school age. Journal of the American medical association, 77:672–74, August 27, 1921.

Presents results noted in classes of cardiac pupils segregated at a public school in New York City.

1114. **Harris, Louis I.** Minimum health standards in schools. Nation's health, 3:477–79, August 1921.

"Specific public health problems," says the writer, "are bound up with school hygiene because of the large proportion of the ill health of the community which is found among children of school age." Presents an outline of minimum sanitary standards for the protection of school children and teachers.

1115. **Hays, Harold M.** Needed measures for the prevention of deafness during early life. Journal of the American medical association, 77:263–67, July 23, 1921.

Advocates more careful treatment and testing of children's ears. Emphasizes the education of parents, teachers, and physicians as to the factors which cause deafness.

1116. **Horwitz, Alexander E.** Educational needs of the crippled child. Nation's health, 3:472–74, August 1921.

Describes the work of the Massachusetts hospital school, the Minnesota state hospital, Nebraska orthopedic hospital, and New York state hospital in giving scholastic and shop instruction to crippled children.

1117. **Howe, William A.** School medical inspection in New York state. [Albany, 1921] cover-title, p. 181–191. 8°.

Read before the Medical society of the county of Albany, 1921.
Reprinted from Albany medical annals, June 1921.

1118. **Turner, C. E.** Health teaching and the school health program. American journal of public health, 11:717–20, August 1921.

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SEX HYGIENE.

1119. **Kefauver, Christine R.** Sex education of the child: how the nurse may help. American journal of nursing, 21:779–82, August 1921.

PHYSICAL TRAINING.

1120. **Holmes, P. K.** Sanity as related to athletics. Educational review, 62:55–63, June 1921.

Discusses the danger of overtraining, the fostering of various forms of professionalism, etc. Deprecates the dominance of alumni and student control of athletics.

PLAY AND RECREATION.

1121. **Batchelor, W. C.** The educational significance of recreative activity. American physical education review, 26:222–28, May 1921.

Given before the New century club, February 8, 1921.

Recreative activity is not only a "vital factor in any educational system but the very foundation and essence of education itself."

SOCIAL ASPECTS OF EDUCATION.

1122. **Carothers, W. H.** The money value of education. Teaching, 5:16–21, April 1921.

Education has practical, financial value.

1123. **Jarrett, Mary C.** The educational value of psychiatric social work. Mental hygiene, 5:509–18, July 1921.

Says that the two great opportunities for preventive social work are in the school and in industry. Discusses social service through visiting teachers, who are trained in psychiatric work.

CHILD WELFARE.

1124. **Clopper, Edward N.** Child welfare in Tennessee; an inquiry by the National child labor committee for the Tennessee child welfare commission. [Nashville, Printing department, Tennessee industrial school, 1920] 616 p. 8°.

CONTENTS.—Introduction, E. N. Clopper.—The child and the state, W. H. Swift.—Health, H. H. Mitchell.—Schools, Gertrude H. Folks.—Recreation, R. G. Fuller.—Rural life, C. E. Gibbons.—Child labor, Mrs. Mary H. Mitchell.—Juvenile courts, Mabel B. Ellis.—Mothers' pensions, Mabel B. Ellis.—Institutions, Sara A. Brown.—Home finding, Sara A. Brown.

RELIGIOUS AND CHURCH EDUCATION.

1125. **Cope, Henry Frederick.** The parent and the child; case studies in the problems of parenthood. New York, G. H. Doran company [1921] 184p. 12°.

Aims to be a practical handbook for parents in moral and religious training in the family by applying the "case method" to this subject.

1126. **Dunney, Joseph A.** The parish school; its aims, procedure, and problems. New York, The Macmillan company, 1921. xix, 326p. fold. charts. 12°.

A general survey of the Roman Catholic parochial school—its aims, principles, organization, procedure, and problems.

1127. **Kandel, I. L.** The vitalizing of Jewish education. Menorah journal, 7:84–91, June 1921.

Advocates for the Jewish school a curriculum which makes the living present its starting point and links it with the remote past.

1128. **Kelly, Robert L.** Biblical history and literature as a college entrance requirement. Religious education, 16:199–207, August 1921.

Gives a list of institutions accepting Bible history and literature as entrance credit.

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1129. **Kepley, Charles Everett.** The rural Sunday school. Columbia, S. C., University of South Carolina, 1921. 51 p. 8°. (Bulletin of the University of South Carolina. no. 99, June 1921)

Gives the general principles for the organization and operation of rural Sunday schools.

1130. **Kirsch, Felix M.** The future of the small college. Catholic educational review, 19:431–45, September 1921.

Paper read at the 18th annual meeting of the Catholic educational association, held at Cincinnati, Ohio, July, 1921.

1131. **McClure, Haven.** The contents of the New Testament; an introductory course. New York, The Macmillan company, 1921. 219p. 12°.

This book is the outcome of a number of years' classroom experience in teaching the New Testament as an elective English course in a public high school of over 500 students. It analyzes the contents of each New Testament writing by applying present-day methods of literary and historical research in a manner intelligible to the younger mind and to the general reader.

1132. **Richards, George Warren.** The function of the Christian college. Educational review, 62:116–26, September 1921.

Holds that a Christian college is true to its name when it deliberately aims to give its students the Christian ideal of life and to inspire in them the resolute purpose to practice it in all individual and social relations.

1133. **Ryan, James H.**, *comp.* Directory of Catholic colleges and schools. Washington, D. C., National Catholic welfare council, Bureau of education, 1921. 980, xxx p. 8°.

A list of Catholic educational institutions in the United States, with names of officers and statistics.

MANUAL AND VOCATIONAL TRAINING.

1134. **Aurner, Clarence Ray.** Mechanics' institutions. Iowa journal of history and politics, 19:389–413, July 1921.

Recalls the efforts made a century ago to graft scientific and cultural studies upon mechanical training, by establishing mechanics' institutions.

1135. **California. State board of education.** Documents relating to vocational education. Sacramento, California state printing office, 1921. 84p. 8°. (*Its* Bulletin no. 23–A. Fiscal year 1921–22)

CONTENTS.—I. General information relating to the administration of vocational education in California.—II. General regulations of the State board of education for the establishment and maintenance of federal and state aided vocational education in the public intermediate and secondary schools of California.—III. Requirements for teachers of vocational subjects under the provisions of the federal and state vocational education acts.—IV. Plan for the supervision of vocational courses in agriculture.—V. Plan for the training of vocational teachers.

1136. **Canada. Department of labour.** Proceedings of the first national conference on technical education Canada, Ottawa, October 25–26 1920. Issued by the director of technical education, Department of labour, Canada. Ottawa, T. Mulvey, printer to the King's Most Excellent Majesty, 1921. 76p. 8°. (Bulletin no. 1. Vocational education series)

1137. **Douglas, Paul H.** American apprenticeship and industrial education. New York, Columbia university; London, P. S. King & Son, ltd., 1921. 348p. 8°. (Studies in history, economics and public law. vol. xcv, no. 2. Whole no. 216.)

1138. **MacDonald, D. J.** Part-time classes in industrial education. Educational review, 62:1–9, June 1921.

Discusses the standard method of securing suitable subject matter for the classes. Writer says that certain definite questions must be faced, viz: (1) What is meant by suitable subject matter? (2) What are the objectives aimed at in part-time classes? and (3) What are the chief factors that must be reckoned with, in trying to attain the stated objectives?

1139. **Winslow, L. L.** A constructive plan for the organization and administration of junior high school courses in industrial arts for boys. Industrial-arts magazine, 10:243–47, July 1921.

It is desirable to include in all junior high school courses, as much experience of prevocational worth as possible. These schools should assist the pupils in selecting an occupation.

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VOCATIONAL GUIDANCE.

1140. **Brewer, John M.** The aims and methods of vocational guidance. Educational review, 62:10–21, June 1921.

Approves the study of the actual opportunities in and problems of the occupational world. Says that the best way to accomplish this is to organize definitely a class for the study of occupations.

1141. ——— Practical arts for vocational guidance in the junior high school. Manual training magazine, 23:69–72, September 1921.

1142. **Jacobs, Charles L.** Bibliography on vocational guidance; a selected list of vocational guidance references for teachers. Washington, D. C., Federal board for vocational education, 1921. 35 p. 8°. (Bulletin no. 66. Trade and industrial series no. 19. June, 1921)

Many of the titles in this list are fully annotated.

1143. **Jones, Arthur J.** Vocational guidance and education. Educational review, 62:10–21, June 1921.

Discusses the value of vocational guidance, but criticises the extravagant claims made for it.

1144. **Leigh, Mildred B.** Vocational guidance for college women. Educational review, 62:34–45, June 1921.

Describes the work of the various college alumnae in securing employment for college graduates. Emphasizes the importance of the work.

HOME ECONOMICS.

1145. **Davenport, Eugene.** Home economics at Illinois. Journal of home economics, 13:337–41, August 1921.

"Presented at the Recognition service in honor of Professor Isabel Bevier, May 26, 1921."

1146. **Denny, Grace.** Practical teaching of textiles in high schools. Journal of home economics, 13:342–45, August 1921.

"Methods and teaching agencies": p. 345.

1147. **Snedden, David.** Household arts for junior high schools. Journal of home economics, 13:289–96, July 1921.

Address delivered before the Household arts section of the Eastern arts association, Baltimore, March, 1921.

COMMERCIAL EDUCATION.

1148. **National foreign trade convention.** Group one. Commercial education for foreign trade. *In* Official report of the eighth National foreign trade convention, held at Cleveland, Ohio, May 4–7, 1921. New York, 1921. p. 47–78. (O. K. Davis, secretary, National foreign trade council, New York, N. Y.)

Contains: 1. J. A. De Haas: Fundamentals in foreign trade education, p. 47–56. 2. W. S. Tower: Means of getting an international viewpoint in foreign trade education, p. 57–63. 3. Discussion, p. 64–78.

1149. Training for a new profession. Current affairs (Boston, Mass.) 12:3–4, 32, August 1, 1921.

An account of the first school for commercial organization secretaries, held at Northwestern university, Evanston, Ill., July, 1921.

LEGAL EDUCATION.

1150. **Reed, Alfred Zantzinger.** Training for the public profession of the law. Historical development and principal contemporary problems of legal education in the United States, with some account of conditions in England and Canada. New York city, 522 Fifth avenue, 1921. xviii, 498 p. 8°. (Carnegie foundation for the advancement of teaching. Bulletin no. 15)

This report presents not merely a criticism of the existing law schools, and of present day tendencies in the professional training of lawyers, but it describes the history and progress of American legal education. It undertakes to make clear the relation of the bar and of the bar examinations to legal education. The present volume is to be followed by one dealing with the contemporary situation in greater detail.

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MEDICAL EDUCATION.

1151. **Foote, John.** How to meet examination problems. Trained nurse and hospital review, 67:205–9, September 1921.

1152. **Hamilton, Arthur S.** Graduate training in nervous and mental diseases. Journal of the American medical association, 77:559–62, August 27, 1921.

Advocates a properly standardized course of study for those who desire to fit themselves for a career in neuropsychiatry. Outlines such a course.

1153. **Karsner, Howard T.** "Progressive education" in the teaching of pathology. Science, n. s., 54:81–84, July 29, 1921.

Emphasizes the value of the informal recitation as permitting a better evaluation of the ability of the individual student than is possible with the more formal and more autocratic recitation conducted by the teacher.

1154. **Medical education in the United States.** Journal of the American medical association, 77:527–56, August 13, 1921.

Review of education for 1921 by the Council on medical education and hospitals. Gives statistics of medical colleges in the United States and Canada; distribution of students by states; entrance requirements, etc.

1155. **Muller, George P.** Graduate instruction in surgery. Journal of the American medical association, 77:503–6, August 13, 1921.

Suggests that the medical schools of the universities affiliate with high-class hospitals. Discusses the work of the Committee on postgraduate instruction in surgery.

1156. **National league of nursing education. Committee on education.** Preliminary report on university schools of nursing. American journal of nursing, 21:799, August 1921.

Gives summary of courses in a few existing university schools. Continued from July number p. 716.

CIVIC EDUCATION.

1157. **Boas, Ralph Philip,** *ed.* Youth and the new world. Essays from the Atlantic monthly. Boston, The Atlantic monthly press [1921] viii, 320 p. 12°.

Stimulating essays for young people on the relation of youth's new time to the experience of age; education; the spirit of America; Americanization; women and the state; the problem of international organization; and, finally, the importance of spiritual values.

1158. **Christophelsmeier, Carl.** Citizenship and the schools. South Dakota educator, 34:16–19, 34–39, June 1921.

Article deals not so much with the elementary aspect of citizenship, which is a matter of birth or naturalization, as with the question of good citizenship, which is a matter of education.

1159. **Hart, Joseph K.** Social science in the schools. Survey, 46:591–92, August 16, 1921.

Says that while almost all schools are reputed as giving civics courses of some sort, less than 50 per cent are giving courses of a modern, positive, constructive sort. Discusses data collected by the National committee for teaching citizenship.

1160. **Jelliffe, Ella K.** America's making. Education, 42:21–26, September 1921.

An outline of work in the public schools in preparation for the festival and exhibit called "America's making," to be presented by societies, schools, churches, libraries, museums, and citizens of New York, during October, 1921, under the auspices of the state and city departments of education.

1161. **New York (State) Legislature.** Revolutionary radicalism; its history, purpose, and tactics, with an exposition and discussion of the steps being taken and required to curb it; being the report of the Joint legislative committee investigating seditious activities, filed April 24, 1920, in the Senate of the state of New York. Albany, J. B. Lyon company, printers, 1920. 4 v. plates. 8°.

Vols. I and II deal with subversive movements; Vols. III and IV take up constructive measures, and are mainly devoted to Educational training for citizenship, both in New York and in other states of the Union.

AMERICANIZATION.

1162. **Akron, Ohio. Board of education.** Akron public schools, 1920–1921. Department of Americanization. Annual report. [31] p. illus. 8°.

Bibliography: p. [28–31].

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1163. **Clark, E. Everett.** The Akron plan. Survey, 46:518–19, July 16, 1921.
Describes the Americanization work in Akron, Ohio, which is supported, controlled, and directed by the Board of education of the city.

1164. **Hart, Helen.** State programs of immigrant education. Survey, 46:516–18, July 16, 1921.
Outlines the state programs of Massachusetts and New York. Gives typical programs.

1165. **Jordan, Riverda Harding.** Nationality and school progress; a study in Americanization. Bloomington, Ill., Public school publishing company [1921] 105 p. tables. 12°. (School and home education monographs, no. 4.)
Thesis (Ph. D.)—University of Minnesota, 1921.
This investigation of school children with reference to nationality and progress was made in various public schools of Minneapolis and St. Paul which were selected as representative of social groups in these cities. The conclusions are a contribution toward the information now available for the determination of the influence of nationality on school progress. There are not yet available instruments for measuring school progress so well designed and standardized as to detect the exact effects of nationality, apart from other factors involved.

1166. **Rosenstein, David.** Contributions of education to ethnic fusion in America. School and society, 13:673–82, June 18, 1921.
A comment on Julius Drachsler's Democracy and Assimilation.

1167. **Weber, Joseph J.** A little island of foreigners. Survey, 46:548–50, August 1, 1921.
Describes a group of Russian immigrants settled in North Dakota; their schools, etc. Americanization work among them.

EDUCATION OF SERVICE MEN.

1168. **Knappen, Theodore M.** The army as a school. American review of reviews. 63:627–35, June 1921.
The army as a school for social, scientific and vocational education. Describes its effective vocational training.

EDUCATION OF WOMEN.

1169. **Austin, Mary.** American women and the intellectual life. Bookman, 53: 481-85, August 1921.

1170. **Chaubal, M. B.** The aims of the Women's university. Indian review, 22: 443–44, July 1921.
Part of the convocation address of the chancellor of the Indian women's university, June 19, 1921, showing what has been accomplished by the university during the five years of its existence. The institution provides for the higher education of women through the Indian vernaculars.

1171. **Mann, Kristine.** Hygiene in the woman's college. Educational review, 62: 46–57, June 1921.

1172. **Shuler, Marjorie.** Teaching women politics. American review of reviews, 64:274–77, September 1921.
Tells of numerous schools of citizenship for women established at various colleges and universities and elsewhere, with particular attention to the citizenship school for women to be conducted at Yale university, during the week of October 24, 1921.

1173. **Woodward, Elizabeth A.** Educational opportunities for women from other lands. With a chapter on legislation affecting women by Esther Everett Lape. [Albany, The University, 1920.] cover-title, 35 p. front, plates. 8°. (University of the state of New York bulletin no. 718, Sept. 15, 1920.)
"Bibliography" 33-35.

NEGRO EDUCATION.

1174. **Moroney, T. B.** The Americanization of the Negro. Catholic world, 113: 577–84, August 1921.
Shows the work that the Catholics have been and are doing for the education of Negroes.

1175. Negro education in North Carolina. School and society, 14:53, July 30, 1921.
The State department of education of North Carolina has created a division of Negro education, with an enlarged staff of white and colored assistants.

1176. **Ransom, Reverdy C.** Educational problems. Southern workman, 50: 417–20, September 1921.
Excerpts from an address before a union meeting of preachers, farmers, and teachers in conference week at Hampton institute, June 1921.

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EDUCATION OF DEAF.

1177. **Panconcelli-Calzia, G.** What experimental phonetics has accomplished for the instruction of the hard of hearing and the deaf. Volta review, 23: 417–22, September 1921.

Describes the work in applied experimental phonetics of German investigators. Studies in the phonetic laboratory of the University of Hamburg, etc.

1178. **Thompson, Iza.** The sensitive flame of the Bunsen burner as an aid to voice production and speech for the congenitally deaf child. Volta review, 23: 397–99, September 1921.

EXCEPTIONAL CHILDREN.

1179. **Barrows, Franklin W.** The relation of physical examinations to public school special classes. Utica, N. Y., State hospitals press, 1921. 6p. 8°.

Reprinted from the State hospital quarterly, February 1921.

1180. **Shrubsall, F. C.** The ascertainment of mental deficiency. School hygiene (London) 12:115–37, August 1921.

Delivered at the Conference of the school medical officers of Scotland in Edinburgh, April 7, 1921.

EDUCATION EXTENSION.

1181. **Bazeley, E. T.** Two experiments in voluntary continuation schools. Journal of experimental pedagogy (London) 6:82–89, June 1921.

Describes the cooperation between English business houses and training college. Second paper.

LIBRARIES AND READING.

1182. County libraries of California. Survey, 46:520–21, July 16, 1921.

1183. **Harris, Muriel.** On reading aloud. North American review, 214:345–51, September 1921.

Writer says that nineteenth century scholarship, which has no mean roll of names, read aloud with zest. Reading aloud has fallen away at present, because it is at a disadvantage in competition with the quicker methods of the cinematograph, of nature-study, and of reading alone.

1184. **Miller, Zana K.** How to organize a library. Boston, New York [etc.] Library bureau [1921] 40p. illus. 12°.

1185. **Skinner, Margaret M.** The use of recent literature in the high school. Publishers' weekly, 100:171–80, July 23, 1921.

Paper delivered at the meeting of the National education association at Des Moines, Iowa, July 16, 1921.

1186. **Tryon, R. M.** The history library and its use in one hundred public high schools in Illinois. School and home education, 40:161–66, May–June 1921.

Some guiding principles for the upbuilding of high school history libraries should be decided upon, such as, i. e., to work on the principle of a well-balanced classified library, and the selection of a dozen books in each field of history taught.

BUREAU OF EDUCATION: RECENT PUBLICATIONS.

1187. Educational survey of the University of Arkansas; summary of conclusions and recommendations. Washington, 1921. 43p.

A digest of the report of a survey of the University of Arkansas, made at the request of the legislative committee in charge of the survey, under the direction of the United States Commissioner of education.

1188. Educational work of the commercial museum of Philadelphia; by Charles R. Toothaker. Washington, 1921. 28p. 12 plates. (Bulletin, 1920, no. 13)

1189. The Francis Scott Key school, Locust Point, Baltimore, Maryland; by Charles A. Bennett. Washington, 1921. 31p. (Bulletin, 1920, no. 41)

1190. The function concept in secondary school mathematics; a report by the National committee on mathematical requirements. Washington, 1921. 11p. (Secondary school circular no. 8. June, 1921)

1191. State laws relating to education enacted in 1918 and 1919; comp. by William R. Hood. Washington, 1921. 231p. (Bulletin, 1920, no. 30)

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DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

BULLETIN, 1921, No. 30

SALARIES OF ADMINISTRATIVE OFFICERS AND THEIR ASSISTANTS IN SCHOOL SYSTEMS OF CITIES OF 25,000 INHABITANTS OR MORE

By

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SALARIES OF ADMINISTRATIVE OFFICERS AND THEIR ASSISTANTS IN SCHOOL SYSTEMS OF CITIES OF 25,000 INHABITANTS OR MORE.

INTRODUCTION.

By P. P. CLAXTON

Only a few years ago the public schools of most of the largest cities of the United States were constantly "in politics." Superintendents and their assistants all too frequently came and went with changing administrations of city affairs. Individual members of boards, aldermen, or city councils, through political pull obtained the appointment of some teachers and the dismissal of others, thus paying political debts and squaring political animosities. Boards of education, usually very large, made up chiefly of ward politicians, more or less under the control of the "bosses" of the wards from which they were appointed or elected and the representatives of which they understood themselves to be, were uncertain both as to their rights and their powers, servilely yielding or stubbornly antagonizing mayors and boards of aldermen that constantly interfered, sometimes domineeringly, with their duties.

They in turn interfered, both as boards and as individuals, without regard to any sound principles of administration, with the duties of the superintendent of schools and his assistants. Too often there was apparent reason for such interference because of the inefficiency of low-salaried superintendents and the failure of boards to provide the office of the superintendent with a sufficient number of competent and adequately paid administrative assistants. Boards, too large to function effectively as a whole, were subdivided into many standing and special committees which attempted to do, but ineffectively and wastefully, a wide range of things that should have been left wholly to the superintendent and his assistants.

When they did not thus interfere harmfully, school boards required of the superintendents of schools and their small corps of low-paid assistants, where there were any, a wide range of tasks, which were, because of their variety, number, and size, utterly beyond the ability of educators trained for the schoolroom and interested chiefly in courses of study and methods of teaching. The superintendent was too often expected, with the help only of an inadequate corps of inexperienced and inefficient clerks, to direct the details of expenditures

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of hundreds of thousands or even millions of dollars, look after the erection of buildings, purchase all fuel and supplies, keep accounts of all receipts and expenditures, employ janitors and supervise their work, serve as sanitary and health inspector, examine teachers, make reports, statistical and other, and look after a thousand and one details of organization and administration—all of which took so much of his time and strength that the important function of directing wisely the educational work of the schools, for which the superintendent was fitted by disposition and training and for which all else in the school system exists, had to be neglected. In attempting to save thousands of dollars in the salaries of superintendents and their offices, tens and hundreds of thousands were lost through the lack of definite and effective administration, business management, and accounting.

Sometimes there was actual antagonism between the board and the superintendent of schools, or at least a total lack of any feeling of authority on the one side or of responsibility on the other. Frequently the superintendent could not be held responsible for the work of the schools because he was given little or no authority. Still more frequently the board could not be held responsible for the efficiency and success of the schools because, although given apparent authority, it had little real authority, not being able to control its budget. The board complained of the superintendent, the people complained of both, and the schools failed of their purpose because neither the board nor the superintendent was given the means or the freedom and authority necessary to all good and successful work.

Conditions are still far from perfect, but they are much better than they were only a decade or two ago, and are improving. There is a much better understanding of the powers, functions, responsibilities, and methods of procedure, both of boards and of superintendents. They are beginning to understand each other better, to differentiate their functions more clearly, and to respect more the authority and responsibility, each of the other. The people and their representatives in legislative bodies and administrative offices have gained a higher conception of the work of the schools and are therefore inclined to interfere less and to help more by recognizing more fully the authority, the responsibility, and the rights both of school boards and school superintendents, and by voting and appropriating more adequate funds for the equipment and support of the schools.

For any large city, and in most respects for any small city or town as well, the ideal would probably be somewhat as follows; at least this is what is recommended by the Bureau of Education:

I. A small board of five or seven members elected by the people on a nonpartisan ticket from the city at large, or appointed by the mayor and confirmed by the city council. Election by the people is more

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democratic and, in most cases, better than appointment. If the board is appointed, it should be made as nearly as possible nonpartisan by stipulating that not more than three out of five or four out of seven members may be of any one political party. The term of office should be for as many years as there are members of the board; the term of one member expiring each year. On an appointive board, no person having served two terms in succession should be eligible for reappointment. Members of the board should be removable only by a majority vote at a properly constituted election or upon conviction of crime or gross neglect of duty. There should be no means by which the whole or a part of the board could be removed for sinister purpose by the mayor, the city council, or any other political or semipolitical body.

Members of boards should not be paid a salary. Salaried members of boards are in danger of the temptation of wanting to earn their salaries by administrative activities that should be left to the superintendent and other employees of the board. The board should regard itself as a legislative and policy-making body like unto the boards of directors of a bank or any other business or industry. Its members should remember that they have no more individual authority than have the members of any other legislative body and that when the board is not in session they are only ordinary citizens, subject like all other citizens to the rules and policies of the board itself. No member should ever assume to make promises for the board or to speak for it except when duly authorized to do so. The number of standing and special committees should be reduced to a minimum. A small board with a competent superintendent and administrative staff should have little need of standing committees. The board should elect its own chairman annually and employ a competent secretary from outside its own membership. It should hold open meetings at stated times, not too frequent, should require attendance of its members, and not do business without a quorum actually present. All action should be taken by formal vote and should be duly and accurately recorded. The records of the board should be open for the inspection of the public and all important actions affecting the policy should be published promptly in the public prints. The superintendent of schools should be expected to attend all meetings of the board except when his own election, his salary, or other matters pertaining to his own interests are being voted on.

Under the provisions of the charter of the city, the constitution of the State, and the acts of the legislature, the board of education should have entire control of the schools, be held responsible for their success, and should be given such power as necessarily accompanies such responsibility. Among the powers of the board should be the

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making of its budget without review by any other body, determining and carrying out its own program of building, repairing and equipping schoolhouses, including their location and the purchasing of sites, and within limits prescribed by law levying taxes and issuing and selling bonds for school purposes.

II. As its administrative agent the school board should employ a competent superintendent of schools. To assist in assuring his competency, the salary should be made large enough and the conditions of employment such as to attract men of first-rate ability, preparation, and successful experience. No man worthy of the position of superintendent of schools works for pay alone or thinks of salary first, but in America, where we have put everything on a money basis and have eliminated to a large extent at least patronage, favoritism, and special privilege, we should not expect such service as is required of a superintendent of schools in a city of any size for much less pay than a man of equal ability might earn elsewhere for services requiring as much effort and responsibility and no more risk or uncertainty. No superintendent whose heart is in his work will want the difference between his own salary and the salary of his assistants and the teachers to be so great as to create discontent or result in giving to a competent head incompetent assistants. Yet since the value of all the work of all connected with the school system depends on the wisdom, energy, tact, and executive ability of the superintendent, it is utmost folly for a board to attempt to save money by skimping his salary. This is coming to be understood and is recognized more and more, as is shown by a comparison of salaries of superintendents given in this bulletin with the salaries of superintendents in the same cities 10 or 20 years ago.

In every large city the superintendent of schools should have the assistance of a competent business manager and assistant superintendent for each important division of the school work, and should have under his direction a competent corps of directors or supervisors of special subjects. There should also be under his direction an efficient bureau of research or investigation and statistics. There should also be sufficient clerical and office help to relieve the superintendent and all his assistants from time and energy consuming details and leave freedom for larger and more important tasks. Through these, under the general authority of the board of education and in harmony with its larger policies, the administration of the schools should be such as to bring out and utilize to the fullest possible extent all the latent energies of all administrative and supervising officers and all teachers and students. Everywhere there should be such definiteness of purpose, combined with such freedom of initiative, as will inspire the heartiest and most effective coopera-

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tion for the fullest attainment of the great work of the schools, the right education of all the children, and the inspiration of the entire community with higher ideals, inspiring purposes, and clearer conceptions of the duties and responsibilities of patriotic American citizens.

In Bulletin, 1917, No. 8, was given an analysis of the constitution and powers of the boards of education in these cities.

In Bulletin, 1917, No. 46, the report of the survey of the schools of San Francisco, pages 83–88, is a clear and comprehensive statement of the functions of the board of education and the superintendent of schools on the basis of analogy with the business corporation. Readers of this bulletin are referred to these two bulletins.

In this bulletin are given the salaries paid administrative and supervisory officers in cities having a population of 25,000 or over, also the salaries paid all employees connected with the school administrative offices in cities having a population of over 100,000. Unfortunately some of the superintendents in this group of cities did not report with the same degree of fullness of detail, as the request for information was not interpreted in the same way by all to whom it was sent. But, upon the whole, the data are sufficiently complete to furnish valuable information to boards of education and others making a study of the salaries of superintendents, supervisors, and other persons connected with the various administrative offices.

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Salaries of certain officers in city school departments of education in cities of over 100,000 population.

[NOTE.—Blank spaces do not necessarily indicate that the school system does not have certain positions, but that the city did not report the positions or reported in such way that the data could not be tabulated. For example, some superintendents gave the salaries of supervisors without stating for what subject or purpose the supervisors are employed. Where there are several assistant or associate superintendents, the highest salary is given.

Cities.	Superintendent of schools.	Assistant superintendent of schools.	Superintendent of buildings.	Business manager or superintendent of supplies.	Secretary to school board.	Chief attendance officer.	Supervisors or directors.									
							Art.	Music.	Penmanship.	Kindergarten.	Primary grades.	Home economics.	Manual training.	Physical education.	Health.	Special classes.	Educational measurements and research.
Average	$7,336	$4,664	$3,676	$4,720	$3,831	$2,526	$2,874	$3,036	$2,639	$2,818	$2,827	$2,740	$3,305	$2,987	$3,134	$3,017	$4,187
Akron, Ohio	9,000	5,500	4,000	5,500	.....	2,000	2,600	2,600	.....	.....	.....	.....	.....	2,600	.....	.....	3,600
Albany, N. Y	6,000	.....	3,050	.....	2,500	1,700	3,200	3,050	2,500	2,500	2,500	.....	2,500	3,400	.....	3,200	.....
Atlanta, Ga	5,000	3,600	2,400	.....	.....	1,080	.....	.....	.....	.....	1,736	.....	.....	.....	.....	.....	.....
Baltimore, Md	8,000	6,000	2,300	.....	2,750	.....	2,000	2,500	.....	2,100	.....	2,000	2,900	2,000	.....	.....	.....
Birmingham, Ala	7,500	5,000	2,400	.....	2,700	2,000	2,200	2,500	2,000	.....	2,200	2,500	2,400	2,700	2,700	2,100	.....
Boston, Mass	10,000	.....	3,000	4,740	4,740	2,880	.....	3,540	2,004	2,740	.....	2,820	3,540	3,340	3,000	2,260	3,510
Bridgeport, Conn	6,000	4,000	.....	2,400	.....	.....	2,300	2,500	1,950	.....	.....	.....	.....	2,600	.....	.....	.....
Buffalo, N. Y	10,000	4,800	5,000	.....	3,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cambridge, Mass	6,000	4,320	2,500	3,000	.....	1,800	3,220	3,220	.....	2,460	2,460	.....	.....	2,460	.....	2,460	.....
Chicago, Ill	12,000	8,100	8,000	10,000	.....	5,300	3,750	3,750	.....	.....	.....	4,500	5,000	4,500	.....	5,000	.....
Cincinnati, Ohio	10,000	5,000	.....	5,000	.....	.....	3,600	3,600	3,600	3,000	.....	3,200	3,500	3,600	(1)	(1)	.....
Cleveland, Ohio	10,000	6,500	4,500	.....	.....	4,000	3,560	3,680	3,560	3,000	.....	3,560	3,680	3,560	3,300	3,000	4,500
Columbus, Ohio	7,500	4,500	3,000	4,000	.....	1,560	2,625	2,625	.....	2,135	.....	2,250	2,250	2,625	3,600	.....	.....
Dallas, Tex	7,200	6,000	3,000	3,000	4,800	.....	3,000	3,000	.....	.....	3,000	.....	.....	2,000	.....	.....	.....
Dayton, Ohio	6,120	.....	2,520	.....	4,000	2,050	2,050	2,550	2,050	1,750	.....	2,550	2,550	2,050	.....	.....	.....
Denver, Colo	8,000	5,000	.....	5,000	.....	2,400	2,590	3,500	2,640	.....	.....	2,740	2,940	2,540	.....	.....	3,240
Des Moines, Iowa	7,500	4,000	3,500	4,200	.....	3,500	2,412	2,700	2,167	2,412	3,000	2,340	3,400	.....	1,758	.....	2,500
Detroit, Mich	9,000	7,680	.....	5,200	.....	3,000	4,000	4,000	4,000	[2] 4,000	.....	4,000	4,000	4,000	.....	4,800	6,000
Fall River, Mass	5,000	3,400	.....	.....	.....	1,800	2,880	2,880	.....	.....	2,280	2,120	.....	2,400	.....	.....	.....
Houston, Tex	6,000	.....	.....	3,600	.....	.....	2,600	2,400	2,500	.....	2,700	2,100	2,700	.....	4,200	.....	.....
Indianapolis, Ind	8,000	4,500	3,500	6,000	.....	3,000	3,500	3,500	3,000	.....	.....	2,300	3,500	3,800	.....	.....	3,600
Jersey City, N. J	10,500	5,400	2,500	.....	4,250	2,800	4,100	3,800	.....	.....	3,900	4,100	4,100	3,800	2,500	2,300	.....
Kansas City, Kans	5,000	.....	3,000	.....	3,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kansas City, Mo	7,500	4,740	.....	.....	.....	.....	.....	.....	.....	[3] 3,800	.....	.....	.....	.....	.....	.....	4,980
Lowell, Mass	5,000	.....	.....	3,100	.....	3,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Los Angeles, Calif	8,000	4,800	.....	5,000	3,900	3,600	3,840	3,840	3,840	3,840	.....	3,840	3,840	3,840	3,900	.....	3,600
Louisville, Ky	5,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Memphis, Tenn	5,000	.....	.....	.....	3,000	1,320	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Milwaukee, Wis	9,000	5,000	.....	7,200	.....	3,840	3,840	3,840	.....	.....	4,520	3,840	3,840	3,840	.....	3,480	.....
Minneapolis, Minn	8,000	4,500	3,600	5,000	.....	3,000	2,750	3,200	2,200	.....	.....	2,500	3,300	3,300	.....	.....	.....

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Nashville, Tenn.	4,800	4,900	3,000	3,000	6,000	1,440	1,700	1,700	2,900	.....	.....	2,900	3,900	3,900	1,250	.....	.....	.....
Newark, N. J.	10,000	4,900	3,000	9,000	6,000	4,020	2,900	3,200	2,900	.....	.....	1,850	2,850	2,500	3,000	.....	.....	.....
New Bedford, Mass.	6,500	3,600	2,800	.....	.....	1,800	2,975	2,975	.....	.....	.....	1,850	2,500	2,500	.....	.....	.....	.....
New Haven, Conn.	5,000	3,950	3,250	.....	3,550	.....	2,750	2,650	2,650	2,100	.....	1,850	1,900	2,650	.....	2,100	.....	.....
New Orleans, La.	8,000	4,500	.....	.....	5,400	2,700	.....	.....	.....	.....	.....	.....	.....	3,240	2,400	.....	.....	.....
New York, N. Y.	12,000	8,250	11,000	9,000	6,500	7,700	6,500	6,500	.....	5,000	.....	5,000	5,500	5,500	.....	5,000	7,000	.....
Norfolk, Va.	5,000	4,000	3,000	.....	1,800	1,000	1,625	1,675	1,550	5,000	.....	.....	.....	2,200	.....	1,800	.....	.....
Oakland, Calif.	10,000	5,500	.....	4,500	.....	3,410	3,060	3,660	2,820	2,820	.....	3,220	.....	2,840	3,744	.....	4,000	.....
Omaha, Nebr.	10,000	4,200	4,800	.....	4,800	2,200	2,200	2,500	2,400	2,600	.....	.....	.....	2,200	2,000	.....	.....	.....
Paterson, N. J.	6,000	4,800	.....	.....	3,500	2,050	2,200	2,000	.....	.....	.....	2,200	2,700	.....	5,000	2,100	.....	.....
Philadelphia, Pa.	12,000	5,000	6,000	.....	6,500	4,510	4,510	5,080	.....	3,410	.....	.....	4,510	.....	4,510	3,410	.....	.....
Pittsburgh, Pa.	12,000	5,000	6,000	.....	5,000	4,000	4,000	4,000	4,000	4,000	.....	4,000	3,600	.....	6,000	.....	4,000	.....
Portland, Oreg.	7,000	4,450	4,200	1,800	.....	2,500	.....	.....	.....	.....	.....	.....	.....	3,900	.....	.....	.....	.....
Providence, R. I.	6,000	4,500	2,600	2,550	4,600	2,700	.....	3,500	2,000	2,500	2,500	.....	.....	3,500	.....	.....	.....	.....
Reading, Pa.	4,700	2,700	2,000	1,325	.....	1,475	1,850	2,000	1,250	1,700	.....	1,500	.....	2,350	1,150	.....	.....	.....
Richmond, Va.	6,500	3,900	3,500	.....	.....	1,280	1,793	2,420	2,420	2,200	2,200	1,793	2,050	2,420	3,000	.....	.....	.....
Rochester, N. Y.	8,000	5,500	3,500	.....	.....	1,620	3,900	4,100	4,100	3,300	.....	3,600	3,400	4,000	.....	3,800	.....	.....
Salt Lake City, Utah	6,000	4,350	4,200	4,500	.....	2,600	2,800	2,550	2,400	.....	3,500	2,000	2,600	2,500	3,000	2,500	.....	.....
San Antonio, Tex.	6,000	3,534	1,782	3,600	.....	1,800	1,950	1,950	.....	.....	2,214	.....	.....	1,950	.....	.....	.....	.....
San Francisco, Calif.	4,000	3,600	.....	.....	.....	1,800	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Scranton, Pa.	6,000	.....	3,600	.....	3,600	1,800	1,890	2,150	1,990	2,110	2,290	1,890	.....	.....	1,800	.....	.....	.....
Seattle, Wash.	10,000	5,100	.....	.....	.....	3,000	3,000	3,660	2,940	.....	3,300	3,660	3,660	.....	.....	.....	.....	.....
Spokane, Wash.	5,800	.....	2,800	.....	3,000	1,800	2,550	2,550	2,450	.....	.....	2,250	2,250	2,250	3,400	.....	.....	.....
Springfield, Mass.	5,800	3,500	.....	.....	.....	2,300	3,175	3,175	.....	.....	.....	2,700	.....	2,975	.....	.....	.....	.....
St. Louis, Mo.	8,000	6,000	7,500	6,000	.....	4,000	.....	4,000	4,000	4,000	2,850	.....	5,000	4,000	5,000	2,600	4,300	.....
St. Paul, Minn.	5,000	2,600	2,500	.....	.....	3,400	2,600	2,700	.....	.....	.....	2,500	3,500	2,650	3,850	2,400	3,800	.....
Syracuse, N. Y.	6,000	2,600	2,600	.....	2,800	1,500	2,450	2,650	2,450	2,450	2,500	2,500	3,600	2,500	.....	.....	.....	.....
Toledo, Ohio.	6,240	4,000	.....	.....	.....	1,800	2,500	2,800	2,200	2,500	2,500	2,200	3,750	2,800	1,900	.....	.....	.....
Trenton, N. J.	7,000	2,100	.....	3,500	3,000	1,500	2,350	2,350	.....	.....	2,250	2,250	2,900	2,150	4,500	.....	.....	.....
Washington, D. C.	6,000	3,750	.....	.....	2,240	1,320	2,740	2,740	2,640	.....	2,900	2,740	3,020	2,740	.....	.....	.....	.....
Wilmington, Del.	6,000	3,000	2,500	.....	2,500	1,500	2,000	2,000	.....	1,800	.....	2,000	.....	1,500	1,500	.....	.....	.....
Worcester, Mass.	6,000	4,600	2,125	4,600	.....	2,100	3,250	3,250	2,000	2,000	.....	2,000	3,250	.....	2,500	.....	.....	.....
Youngstown, Ohio	9,000	4,500	.....	5,000	.....	1,600	2,850	2,375	2,375	3,000	.....	2,250	2,975	2,850	3,300	.....	.....	.....

[1] Part time.

[2] Primary-kindergarten.

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Salaries of administrative and supervisory officers in cities of 25,000 to 100,000 population.

Cities.	Superintendent of schools.	Assistant superintendent of schools.	Secretary of school board.	Business manager.	Superintendent of buildings.	Chief attendance officer.	Supervisors or directors.															
							Kindergartens.	Kindergarten—primary grades.	Primary grades.	Intermediate and grammar grades.	Music.	Art.	Manual training.	Home economics.	Play.	Physical education.	Educational tests and measurements.	Psychological tests.	Vocational education.	Continuation schools.	Evening schools.	Special classes.	Medical inspector.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Montgomery, Ala	$4,200	.....	.....	.....	$1,692	$1,250	.....	.....	.....	.....	$1,215	.....	.....	.....	.....	$1,683	.....	.....	.....	.....	.....	.....	.....
Phoenix, Ariz	6,000	.....	$2,100	.....	.....	1,350	.....	.....	.....	.....	2,100	$2,100	$2,700	$2,100	.....	3,000	.....	.....	.....	.....	.....	.....	$600
Fort Smith, Ark	4,500	.....	.....	.....	2,000	1,500	.....	.....	.....	$2,700	1,800	1,800	.....	.....	$1,800	.....	.....	.....	.....	.....	.....	.....	.....
Little Rock, Ark	4,000	.....	.....	$3,000	2,400	1,800	.....	.....	$2,700	.....	2,400	2,400	2,700	.....	1,800	.....	.....	.....	.....	.....	.....	.....	2,400
Alameda, Calif	4,500	.....	(1)	.....	.....	2,280	.....	.....	.....	.....	2,300	2,300	2,300	2,300	.....	2,540	.....	.....	.....	$2,660	.....	.....	.....
Berkeley, Calif	6,000	$3,900	2,100	3,800	3,000	1,800	.....	$3,300	.....	.....	2,700	2,700	3,800	2,700	[2] 4,250	(3)	$3,380	(4)	.....	.....	$1,000	.....	1,800
Long Beach, Calif	6,000	.....	[5] 3,300	(5)	(5)	2,300	.....	.....	.....	.....	2,900	3,000	3,000	2,800	[6] 2,900	2,900	[3] 2,900	$2,300	.....	.....	3,000	(7)	.....
Sacramento, Calif	5,400	2,700	.....	.....	.....	2,820	$2,820	.....	.....	.....	2,820	2,820	2,940	2,820	[6] 2,940	2,940	.....	.....	.....	.....	1,440	.....	.....
San Diego, Calif	6,000	3,700	(8)	.....	2,178	1,650	.....	2,900	.....	.....	[9] 2,500	[9] 2,600	[9] 2,700	[9] 2,200	.....	[9] 2,500	.....	2,200	.....	.....	2,700	.....	2,600
San Jose, Calif	4,650	2,300	.....	.....	.....	1,000	2,200	.....	.....	.....	2,600	.....	2,600	2,600	.....	.....	.....	.....	.....	.....	2,000	.....	2,000
Stockton, Calif	4,480	3,480	(1)	.....	1,860	1,720	.....	.....	.....	.....	2,520	2,520	2,940	2,640	.....	1,800	.....	.....	.....	.....	3,400	.....	.....
Colorado Springs, Colo	5,500	.....	3,000	.....	.....	.....	1,802	.....	.....	.....	2,500	2,042	1,774	2,082	.....	2,600	1,922	.....	.....	.....	.....	$2,000	.....
Pueblo, Colo.:																							
District No. 20	6,000	.....	900	.....	2,500	1,350	.....	.....	.....	.....	1,800	.....	2,500	2,000	.....	2,200	1,800	.....	.....	1,500	.....	.....	.....
District No. 12	6,000	.....	2,850	.....	.....	1,000	1,450	.....	.....	.....	1,870	1,800	2,220	1,800	.....	2,120	1,800	.....	$1,500	2,175	.....	.....	.....
Meriden, Conn	5,000	.....	.....	.....	1,200	1,000	.....	.....	.....	.....	2,525	2,300	2,000	1,800	.....	2,500	1,900	1,850	.....	.....	450	.....	750
New Britain, Conn	6,000	2,800	.....	.....	.....	1,900	.....	.....	.....	2,800	2,600	2,800	.....	.....	.....	1,750	2,350	.....	.....	.....	3,000	2,100	450
Norwalk, Conn	3,600	2,800	250	.....	1,800	1,800	.....	.....	.....	.....	1,800	1,400	1,800	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Norwich, Conn	4,200	.....	400	.....	.....	.....	.....	.....	.....	.....	1,700	1,600	1,800	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Waterbury, Conn	6,300	.....	2,100	.....	2,500	1,750	.....	2,800	.....	3,300	2,150	1,600	2,400	1,400	.....	2,450	.....	.....	3,500	2,750	.....	.....	.....
Pensacola, Fla	3,600	1,200	.....	.....	2,440	2,000	.....	.....	2,250	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tampa, Fla	4,200	.....	(1)	.....	.....	.....	.....	.....	2,400	(10)	.....	600	1,000	.....	.....	1,200	.....	.....	.....	.....	.....	.....	.....
Augusta, Ga	6,000	.....	.....	3,000	.....	.....	.....	.....	.....	.....	1,800	.....	2,000	.....	900	.....	.....	.....	.....	.....	.....	1,200	.....
Aurora, Ill	5,500	.....	600	.....	.....	1,700	.....	.....	.....	.....	2,000	1,900	3,200	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Aurora, Ill. (west side)	4,200	.....	840	.....	.....	1,500	.....	.....	.....	.....	1,750	1,950	2,000	.....	1,600	2,500	.....	.....	1,800	(11)	1,800	1,800	.....
Bloomington, Ill	5,700	[12] 4,000	1,700	3,000	.....	.....	.....	2,100	.....	.....	2,100	1,800	2,600	1,800	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cicero, Ill	7,100	.....	500	3,300	.....	1,650	.....	.....	2,750	3,100	2,750	1,900	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3,000
Danville, Ill	6,000	4,000	500	2,500	.....	.....	.....	.....	.....	.....	1,350	.....	2,500	1,700	.....	1,750	.....	.....	.....	.....	.....	.....	.....
East St. Louis, Ill	6,000	.....	2,640	.....	2,760	1,000	.....	.....	.....	.....	2,250	2,050	2,650	1,800	.....	2,450	.....	.....	.....	.....	.....	.....	.....
Elgin, Ill	5,000	.....	1,640	.....	1,940	1,940	.....	.....	2,000	.....	2,000	1,800	2,375	.....	.....	3,000	.....	.....	.....	.....	.....	.....	.....
Decatur, Ill	5,000	.....	4,000	(13)	.....	1,350	.....	.....	.....	2,500	1,950	2,000	2,100	1,400	.....	1,500	.....	.....	.....	.....	.....	.....	.....

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Evanston, Ill.	6,500	4,000	2,500	[13]	.....	1,500	.....	2,750	.....	.....	1,700	2,000	.....	2,000	.....	1,600	1,600	.....	.....	.....	.....	.....	2,000
Evanston, Ill. (Dist. No. 76)	6,000	3,500	1,750	.....	.....	1,250	.....	.....	.....	.....	1,800	.....	2,250	1,500	.....	.....	1,500	.....	.....	.....	.....	.....	1,500
Joliet, Ill.	7,000	.....	4,000	.....	2,500	1,450	.....	.....	2,500	.....	2,500	2,500	[14]	2,300	3,600	[3]	.....	.....	.....	.....	.....	.....	.....
Moline, Ill.	5,400	.....	2,200	.....	2,200	900	1,600	.....	.....	.....	1,750	1,700	2,500	1,900	.....	1,900	.....	.....	.....	2,500	.....	.....	.....
Oak Park, Ill.	6,500	.....	.....	2,800	.....	1,500	.....	.....	.....	.....	2,000	2,400	2,800	2,000	.....	.....	.....	.....	.....	.....	.....	.....	.....
Peoria, Ill.	5,500	.....	3,000	.....	2,400	1,660	2,200	.....	1,900	.....	2,200	2,200	2,500	2,200	.....	2,500	.....	.....	3,500	[11]	2,500	.....	3,000
Quincy, Ill.	5,500	.....	2,100	[13]	.....	1,200	.....	.....	.....	.....	1,750	1,750	2,200	1,750	1,900	[3]	.....	.....	.....	.....	.....	1,650	.....
Rockford, Ill.	7,000	.....	.....	.....	3,000	.....	.....	.....	2,350	[10]	2,200	2,550	3,200	2,250	.....	1,500	.....	1,000	1,320	2,800	[15]	.....	600
Rock Island, Ill.	6,000	.....	2,500	[13]	3,000	1,600	.....	.....	.....	.....	1,500	1,500	2,400	1,800	1,800	[3]	.....	.....	.....	.....	.....	.....	2,000
Springfield, Ill.	6,000	.....	2,400	.....	3,000	1,350	.....	.....	2,600	.....	2,600	2,600	2,600	2,600	.....	.....	.....	.....	.....	1,900	.....	1,800	.....
Anderson, Ind.	4,800	.....	1,320	.....	1,833	[21]1,080	.....	.....	2,504	2,504	2,268	2,268	[11]	1,890	.....	2,003	.....	.....	2,500	[11]	[11]	.....	[21]1,701
Fort Wayne, Ind.	6,000	3,400	.....	4,000	2,500	1,500	.....	2,800	.....	.....	2,600	2,800	2,600	2,600	.....	.....	.....	.....	2,500	[11]	.....	.....	1,200
Gary, Ind.	10,000	5,304	.....	3,000	3,000	2,145	.....	2,500	.....	2,605	.....	.....	.....	2,830	.....	4,092	2,530	.....	4,392	2,065	1,500	.....	4,392
Hammond, Ind.	5,000	.....	.....	.....	3,000	1,500	.....	2,400	.....	.....	2,000	2,200	.....	.....	.....	[18]	.....	.....	3,000	.....	.....	.....	.....
Kokomo, Ind.	4,500	.....	100	.....	.....	.....	.....	.....	1,800	.....	1,500	1,575	1,900	.....	.....	2,400	.....	.....	2,750	[11]	[11]	.....	672
Muncie, Ind.	4,800	.....	.....	.....	2,000	.....	2,000	.....	.....	.....	1,900	1,800	2,500	2,250	.....	2,250	1,500	.....	3,600	.....	.....	.....	300
Richmond, Ind.	4,000	.....	1,800	2,200	[19]	1,000	.....	.....	.....	2,000	2,500	2,000	.....	.....	1,800	[3]	.....	.....	3,000	[11]	[11]	.....	.....
South Bend, Ind.	5,400	.....	2,100	2,100	3,600	1,650	.....	.....	.....	.....	2,350	2,150	.....	2,600	3,500	2,000	2,100	.....	3,600	.....	.....	.....	.....
Terre Haure, Ind.	5,000	2,750	500	2,400	.....	1,680	1,700	.....	1,800	.....	2,100	2,100	2,500	2,100	.....	2,300	.....	.....	2,300	.....	.....	1,500	.....
Cedar Rapids, Iowa	4,000	.....	3,000	[13]	3,000	1,800	.....	.....	2,000	.....	2,000	2,000	1,700	1,700	.....	2,400	.....	.....	.....	1,500	.....	.....	2,000
Council Bluffs, Iowa	5,500	3,750	2,000	.....	2,500	1,000	.....	.....	.....	.....	1,700	1,700	2,100	1,700	3,000	[3]	.....	.....	.....	.....	.....	.....	.....
Davenport, Iowa	6,250	.....	3,375	[13]	2,350	1,125	.....	2,500	.....	.....	2,500	2,500	3,200	2,500	.....	2,600	.....	.....	.....	3,000	.....	1,900	2,062
Dubuque, Iowa	4,500	.....	2,500	.....	.....	840	.....	.....	[22]2,200	.....	1,750	1,850	2,800	1,700	.....	2,000	.....	.....	.....	2,000	2,800	2,000	1,850
Sioux City, Iowa	7,500	3,500	4,000	.....	.....	2,400	.....	2,500	.....	2,400	2,200	2,200	3,200	[23]	[23]3,000	1,800	2,200	.....	[14]	2,100	[20]	1,900	.....
Kansas City, Kans.	5,000	.....	3,000	.....	3,000	1,560	.....	.....	.....	.....	2,268	2,268	.....	.....	[24]2,268	2,400	.....	.....	.....	4,000	.....	.....	.....
Topeka, Kans.	5,100	.....	2,500	.....	3,000	.....	.....	.....	2,000	[10]	2,250	1,800	3,200	[25]	2,750	[3]	[25]	.....	.....	.....	.....	.....	.....
Wichita, Kans.	6,300	.....	3,600	.....	3,000	2,200	.....	[22]2,750	.....	.....	2,100	2,600	2,750	2,500	.....	2,700	.....	.....	.....	.....	.....	.....	2,000
Covington, Ky.	3,450	.....	.....	2,400	.....	1,000	.....	1,400	.....	.....	1,850	.....	1,750	.....	.....	1,450	.....	.....	.....	.....	.....	.....	300
Lexington, Ky.	4,200	.....	3,000	[13]	1,800	1,200	.....	.....	.....	.....	1,500	1,500	1,500	1,500	1,200	1,500	.....	.....	.....	.....	.....	.....	1,500
Newport, Ky.	2,500	.....	2,000	[13]	.....	950	.....	.....	.....	.....	1,350	1,350	1,680	1,250	.....	.....	.....	.....	.....	.....	.....	.....	400
Shreveport, La.	5,000	3,500	1,500	.....	.....	.....	1,440	.....	1,440	[10]	1,215	1,500	1,500	1,440	1,440	.....	.....	.....	.....	.....	.....	.....	1,000
Bangor, Me.	3,600	1,500	[1]	.....	[14]	500	1,050	.....	.....	.....	1,250	1,300	2,100	1,600	.....	.....	.....	.....	.....	.....	.....	.....	1,000
Lewiston, Me.	3,300	.....	.....	.....	.....	1,200	1,200	.....	1,700	2,300	1,750	1,400	1,850	1,400	.....	.....	.....	.....	.....	.....	.....	.....	.....
Portland, Me.	6,000	2,000	[1]	.....	1,800	1,200	.....	.....	1,800	2,400	2,400	2,500	.....	1,850	.....	1,800	.....	.....	.....	.....	400	.....	.....
Hagerstown, Md.	4,000	.....	1,750	.....	.....	1,500	.....	1,500	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Brockton, Mass.	5,000	.....	1,500	.....	.....	1,800	.....	.....	1,860	.....	1,900	1,860	.....	.....	.....	2,640	.....	.....	.....	2,600	.....	.....	1,000
Brookline, Mass.	6,000	.....	.....	2,250	.....	1,900	.....	.....	.....	.....	1,875	2,700	.....	[26]2,700	.....	3,300	.....	600	.....	.....	.....	.....	500
Chelsea, Mass.	4,000	.....	1,150	.....	1,600	2,000	.....	.....	1,800	.....	2,000	1,900	.....	.....	.....	.....	.....	.....	.....	1,700	.....	.....	500
Everett, Mass.	4,500	1,800	.....	.....	.....	1,900	.....	.....	.....	.....	2,665	1,700	1,800	.....	.....	2,500	.....	.....	.....	2,000	400	.....	.....

[1] Superintendent acts.
[2] Also one director of nature study at $2,100.
[3] Same as director of play.
[4] Director of educational tests.
[5] Secretary of board, business manager, and superintendent of buildings, one person.
[6] Director of nature study.
[7] Director of pyschological tests.
[8] The assistant superintendent of schools.
[9] Elementary grades.
[10] Primary supervisor.
[11] Director of vocational education.
[12] Principal of high school.
[13] Secretary of board.
[14] Supervisor of art.
[15] Director of continuation schools.
[16] Paid by township.
[17] School nurse.
[18] Three directors: Head, $2,050; supervisor, grades, $1,900; high school, girls, $1,750.
[19] Business manager.
[20] Also supervisor of intermediate.
[21] Art, $2,250; science, $2,250.
[22] Also one director of nature study, at $1,200.
[23] Supervisor of manual training.
[24] Also one director of nature study, at $2,448.
[25] Also teachers in high school.

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Salaries of administrative and supervisory officers in cities of 25,000 to 100,000 population—Continued.

Cities.	Superintendent of schools.	Assistant superintendent of schools.	Secretary of school board.	Business manager.	Supervisors or directors.																
					Superintendent of buildings.	Chief attendance officer.	Kindergartens.	Kindergarten—primary grades.	Primary grades.	Intermediate and grammar grades.	Music.	Art.	Manual training.	Home economics.	Play.	Physical education.	Educational tests and measurements.	Psychological tests.	Vocational education.	Continuation schools.	Evening schools.	Special classes.	Medical inspector.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Fitchburg, Mass	$4,500	.....	.....	.....	$2,200	$2,200	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	$2,000	.....	.....	$1,600
Haverhill, Mass	6,000	.....	.....	.....	.....	.....	.....	$2,500	.....	$2,300	$1,800	$1,800	.....	$1,700	.....	$2,500	.....	.....	.....	2,500	.....	.....	.....
Holyoke, Mass	4,400	$3,450	(1)	.....	1,950	1,950	(8)	(8)	.....	.....	2,400	2,250	$3,050	2,100	.....	2,750	.....	.....	$3,000	2,550	.....	.....	2,750
Lawrence, Mass	4,900	2,670	.....	.....	.....	2,100	.....	.....	.....	.....	2,400	2,920	.....	.....	.....	.....	.....	.....	.....	2,780	$1,000	.....	600
Lynn, Mass	3,900	2,800	.....	.....	.....	2,100	.....	.....	$2,000	.....	2,200	1,700	.....	.....	.....	.....	.....	.....	.....	2,500	.....	.....	.....
Malden, Mass	4,500	.....	$750	.....	.....	1,500	.....	.....	.....	.....	2,600	2,800	.....	.....	.....	2,600	.....	.....	.....	2,600	.....	.....	337
Medford, Mass	4,000	.....	600	.....	.....	1,750	.....	.....	1,800	1,800	1,550	1,700	2,500	.....	.....	2,500	.....	.....	.....	.....	.....	.....	600
New Bedford, Mass	5,500	3,600	(1)	.....	2,800	1,800	.....	.....	.....	.....	3,200	2,975	2,850	(26)	.....	2,500	.....	.....	3,100	3,600	.....	.....	1,600
Pittsfield, Mass	5,500	.....	.....	.....	.....	1,800	$1,670	.....	.....	.....	1,630	2,150	2,150	.....	.....	2,000	.....	.....	.....	2,250	.....	.....	.....
Revere, Mass	4,000	.....	.....	.....	1,750	1,200	.....	.....	.....	.....	1,950	1,500	2,000	1,950	.....	2,100	.....	.....	.....	.....	1,500	$1,800	300
Salem, Mass	4,000	.....	.....	.....	800	2,000	.....	.....	.....	.....	1,700	1,700	1,700	2,200	.....	.....	.....	.....	.....	2,600	.....	.....	1,200
Somerville, Mass	5,000	.....	(1)	.....	3,100	1,800	.....	.....	.....	.....	2,500	1,900	.....	.....	.....	1,550	.....	.....	(1)	[12]2,800	.....	.....	2,500
Taunton, Mass	4,300	.....	.....	.....	.....	1,400	.....	.....	.....	.....	2,100	1,700	2,000	.....	.....	.....	.....	.....	.....	2,300	.....	.....	.....
Battle Creek, Mich	5,000	3,000	350	$2,500	.....	1,800	.....	(8)	.....	2,100	1,900	1,900	.....	.....	.....	2,500	$2,500	.....	3,000	1,900	.....	.....	.....
Calumet, Mich	6,000	.....	600	.....	.....	.....	.....	.....	.....	.....	1,800	1,600	.....	1,750	.....	.....	.....	.....	3,000	.....	.....	.....	.....
Flint, Mich	6,500	3,000	350	4,200	4,200	1,950	2,500	2,500	2,500	3,000	2,150	2,150	3,100	2,125	$2,200	2,200	.....	.....	3,100	3,100	.....	2,000	.....
Jackson, Mich	5,500	3,420	1,500	.....	3,000	1,600	2,400	.....	.....	(8)	2,020	2,020	2,620	1,840	1,700	(3)	2,000	(4)	2,600	(11)	(8)	(4)	3,000
Kalamazoo, Mich	5,500	.....	4,000	.....	3,000	2,000	.....	2,100	.....	.....	2,355	2,070	2,880	2,205	2,250	2,500	.....	.....	.....	.....	.....	.....	1,500
Lansing, Mich	6,000	2,500	.....	.....	2,400	1,100	1,650	.....	.....	.....	2,850	1,750	2,200	1,600	2,500	(3)	.....	.....	2,700	2,000	500	1,750	.....
Muskegon, Mich	5,000	2,400	.....	.....	1,900	1,900	1,700	(8)	(8)	(8)	1,700	1,700	3,200	1,800	1,700	(3)	(8)	$1,020	(23)	2,800	(15)	(7)	1,200
Port Huron, Mich	4,800	.....	1,200	.....	.....	.....	.....	.....	.....	.....	1,750	1,500	2,500	1,600	.....	2,000	.....	.....	1,900	1,500	.....	.....	.....
Saginaw, Mich.:																							
West side	6,000	.....	.....	3,350	1,800	1,200	.....	(10)	2,500	.....	1,800	1,800	2,400	1,900	1,600	2,400	.....	.....	3,300	1,600	.....	1,700	.....
East side	5,000	3,500	3,400	(13)	.....	.....	.....	.....	2,400	.....	1,900	1,975	(8)	.....	.....	2,100	.....	1,800	(8)	2,300	(8)	1,800	.....
Duluth, Minn	7,500	3,900	3,200	.....	3,400	1,775	.....	(10)	2,750	.....	2,450	2,800	2,900	2,100	2,360	2,400	2,100	.....	.....	.....	3,000	.....	3,575
St. Joseph, Mo	6,000	.....	4,000	(13)	4,000	1,500	.....	.....	.....	.....	2,000	2,000	.....	.....	.....	1,600	.....	.....	.....	.....	.....	.....	3,000
Springfield, Mo	4,800	.....	4,500	(13)	4,500	1,350	.....	.....	2,000	2,160	2,700	1,800	2,400	1,620	.....	1,800	.....	.....	.....	1,680	.....	.....	.....
Joplin, Mo	5,200	.....	.....	.....	1,800	.....	.....	.....	2,300	.....	2,300	2,300	2,100	2,300	.....	2,300	.....	.....	.....	.....	.....	.....	.....
Butte, Mont	4,500	.....	2,400	.....	.....	2,100	.....	.....	.....	.....	2,400	2,400	2,600	2,450	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lincoln, Nebr	5,500	3,500	4,000	.....	3,000	1,700	.....	2,200	.....	.....	2,600	2,000	2,800	2,500	.....	2,800	2,300	2,000	2,300	1,800	2,100	.....	3,000

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Manchester, N. H.	4,500	3,000	600			1,800	2,750				2,300	1,800	2,200												
Atlantic City, N. J.	7,000		3,600			1,500		2,700		2,700	2,300	2,400	2,800	1,800		5,000			2,800	2,400		2,200			
Bayonne, N. J.	8,500		3,000		2,400	2,350		3,000			2,850	2,850	2,930	2,850		3,350						2,050	3,000		
Camden, N. J.	6,000		3,000	3,500	(19)	2,900				3,000	2,600	2,500	2,600	2,100	1,900	2,500				2,900			3,500		
East Orange, N. J.	6,000		3,000		2,400	1,700					2,900	2,900	3,400	2,900		3,450							700		
Elizabeth, N. J.	5,500		2,850	3,300							3,200	2,900	3,220			2,900									
Irvington, N. J.	5,000		3,000			1,200					1,800	2,150	2,150			2,300									
Kearny, N. J.	4,500	3,050	2,200	(18)		1,400					2,300	2,300	2,500	2,500		2,600							1,500		
New Brunswick, N. J.	5,000		2,650		1,900	1,750					2,000	2,200	2,500	2,200		2,650				2,650			850		
Orange, N. J.	5,700		3,700	(18)							2,200	2,200	2,500	1,750		2,500				(1)			2,600		
Passaic, N. J.	6,000		3,000	2,500	(18)	2,000		23,000			3,000	2,050	4,000	(22)	3,200	(5)			(22)	(22)		2,250	1,800		
Perth Amboy, N. J.	5,470		2,250		2,000	1,820		2,350			1,700	1,700	2,500	1,600		1,900									
West Hoboken, N. J.	5,300		3,000			1,800			2,100		2,025	2,300	2,600			2,100				2,600	325	2,200	500		
West New York, N. J.	4,700		2,500			1,200					2,300	2,700	2,700	2,300		2,700							700		
Amsterdam, N. Y.	5,250	3,600	1,200			1,200	1,850				1,700	1,600	1,900	2,000		2,100			2,200	2,800	2,000		2,800		
Auburn, N. Y.	4,000		2,000		2,200	1,350					2,000	1,700	2,850	1,700		1,700			(22)	(22)		1,600	1,800		
Binghamton, N. Y.	7,500		2,000			2,350		2,150			2,150	2,350	2,150	(22)	2,300	2,350					1,900	1,800			
Jamestown, N. Y.	5,000	3,500	2,000		3,000	2,000		1,900	2,700		2,100	2,100	2,200	1,500		2,700			2,000	(5)	(5)	1,640	750		
Kingston, N. Y.	3,600		(1)		1,500	750					1,800	1,325				1,925			1,800	2,150			950		
Mount Vernon, N. Y.	6,500		2,900		2,400	1,400		3,000				3,550				2,750	450		3,750	2,600			1,100		
Niagara Falls, N. Y.	6,000		2,000		2,400	1,400		2,800			2,500	2,500	3,100	2,500		2,800			3,100		2,800				
Poughkeepsie, N. Y.	5,400				1,500	1,200					2,200	1,000	1,800			2,200				2,800			2,500		
Rome, N. Y.	5,000					800					1,950	1,950				1,800				300	400		1,000		
Schenectady, N. Y.	4,000		3,500	(18)	(18)						2,600	2,294	2,400	2,160	2,294	(5)				3,075	500		1,500		
Troy, N. Y.	5,500		2,300			1,200	2,150		2,150	2,150	2,300	2,300	2,400	2,550	2,550	(5)			3,000	(11)	540		2,100		
Utica, N. Y.	5,250		3,500	(18)	2,800			2,400			2,400	2,400	2,800	1,700		2,900			4,200	(11)	(11)		1,125		
Yonkers, N. Y.	6,500	5,500	4,500		2,600	1,300	2,375	(5)	(5)	(5)	3,600	3,600	2,950	2,475		2,900			4,800	(11)		(5)	2,000		
Charlotte, N. C.	5,000	2,000	672			1,380				1,800	2,997	1,800	3,600	4,635											
Wilmington, N. C.	4,500	2,500																			1,296				
Winston-Salem, N. C.	5,000				2,400				1,800		3,600			1,600		1,800									
Canton, Ohio	6,000		3,000		3,000	2,100					3,000	2,200	2,600	2,000									3,000		
Hamilton, Ohio	3,500	2,500				1,575																			
Lakewood, Ohio	5,800	5,500	3,800			2,000			2,950	(10)	2,800	2,800				2,350						2,500			
Lima, Ohio	5,000		2,000		1,740	1,500			2,500		2,000	2,500	2,200			2,000	2,500		2,000		(1)	1,800	1,500		
Lorain, Ohio	5,100		2,520	3,600		1,900			2,600		2,500	1,600	2,550	2,000		2,600							2,500		
Mansfield, Ohio	5,000		1,800		2,000	900					2,500	2,200	2,000	2,000		2,100									
Marion, Ohio	4,000		900		1,860						1,800								2,500			1,575			
Newark, Ohio	4,200		600		2,100	(20)					2,200	2,000	2,200	2,000											
Springfield, Ohio	6,500		1,800	2,200					1,200		3,200	1,800	2,200	1,900	2,200	1,600	2,700	(4)			1,600		1,800		
Zanesville, Ohio	4,500		1,200		1,650	(20)			1,700	2,500	1,900	1,600				2,000									
Oklahoma City, Okla.	6,000	4,000	3,600		3,000	1,800	2,600		2,600		2,600	2,600	3,200	2,400		3,600							3,600		
Tulsa, Okla.	9,600		4,200			2,220	2,460		2,500		2,200	2,580	3,160	3,260	3,500	(5)	2,860	(4)	2,590	(11)	(11)		2,410		

[1] Superintendent acts.
[2] Same as director of play.
[4] Director of educational tests.
[5] Secretary of board, business manager, **and superintendent of buildings, one person.**
[6] Director of nature study.
[7] Director of psychological tests.
[8] The assistant superintendent of schools.
[10] Primary supervisor.
[11] Director of vocational education.
[18] Secretary of board.
[19] Director of continuation schools.
[20] Business manager.
[22] Art, $2,250; science, $2,250.
[23] Supervisor of manual training.
[26] Cooking, $1,850; sewing, $1,850.
[27] Half of his time is given to Americanization.
[28] Also supervisor of elementary schools.
[29] Superintendent of buildings.

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Salaries of administrative and supervisory officers in cities of 25,000 to 100,000 population—Continued.

Cities.	Superintendent of schools.	Assistant superintendent of schools.	Secretary of school board.	Business manager.	Superintendent of buildings.	Chief attendance officer.	Supervisors or directors.															
							Kindergartens.	Kindergarten—primary grades.	Primary grades.	Intermediate and grammar grades.	Music.	Art.	Manual training.	Home economics.	Play.	Physical education.	Educational tests and measurements.	Psychological tests.	Vocational education.	Continuation schools.	Evening schools.	Special classes.	Medical inspector.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Allentown, Pa	$5,000	.....	$3,000	.....	$3,600	$1,440	.....	.....	$2,250	.....	$1,920	$2,300	$3,000	$1,920	.....	$2,200	.....	.....	.....	.....	.....	.....	$1,200
Altoona, Pa	5,000	.....	2,700	.....	1,200	1,200	.....	.....	.....	.....	2,500	1,500	.....	2,000	.....	1,800	.....	.....	$3,000	$1,090	.....	.....	600
Bethlehem, Pa	6,000	.....	3,700	(13)	1,800	1,600	.....	.....	.....	.....	2,500	2,500	.....	3,000	.....	.....	.....	.....	4,000	.....	.....	.....	1,650
Chester, Pa	5,000	$2,600	2,500	.....	.....	1,400	.....	.....	2,100	.....	1,900	1,900	2,200	.....	.....	1,600	.....	.....	2,700	.....	.....	.....	1,500
Easton, Pa	5,200	2,400	3,000	.....	1,800	1,500	.....	.....	1,800	.....	1,800	2,400	2,400	.....	.....	2,100	.....	.....	.....	1,700	.....	(10)	400
Hazleton, Pa	5,000	.....	900	(13)	1,800	1,320	.....	.....	1,700	.....	2,500	1,700	2,100	1,900	.....	1,400	.....	.....	(12)	.....	.....	.....	1,000
Johnstown, Pa	5,000	.....	3,500	(13)	.....	1,920	.....	.....	3,225	$2,500	2,000	1,700	.....	1,800	.....	1,700	.....	.....	3,200	1,600	.....	.....	1,000
Lancaster, Pa	4,000	.....	1,800	.....	.....	1,250	.....	.....	1,700	.....	1,900	1,550	.....	.....	.....	.....	.....	.....	.....	.....	$240	$1,300	400
McKeesport, Pa	5,500	.....	3,200	$2,100	.....	2,000	.....	.....	.....	.....	1,800	1,900	2,700	1,800	.....	2,100	.....	.....	2,700	2,100	2,100	1,500	2,000
New Castle, Pa	6,000	.....	2,500	.....	.....	.....	.....	.....	.....	.....	2,100	2,100	.....	.....	$1,600	(8)	.....	.....	3,000	(11)	.....	.....	1,200
Wilkesbarre, Pa	5,500	.....	3,400	1,700	3,600	1,300	.....	.....	.....	.....	2,700	2,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,200
Williamsport, Pa	5,000	.....	1,200	.....	1,599	925	.....	.....	.....	.....	1,837	1,747	.....	2,000	.....	1,354	.....	.....	3,000	.....	.....	.....	925
York, Pa	5,000	.....	3,000	.....	3,000	750	.....	.....	.....	.....	1,700	1,600	1,700	1,400	.....	.....	.....	.....	2,800	1,500	.....	.....	1,125
Newport, R. I	4,000	.....	.....	.....	.....	1,500	.....	.....	.....	.....	1,300	1,650	.....	.....	.....	1,650	.....	.....	.....	.....	.....	.....	.....
Pawtucket, R. I	4,500	.....	1,500	.....	.....	1,800	.....	.....	.....	.....	2,500	.....	2,700	2,700	.....	1,500	.....	.....	.....	.....	.....	.....	1,000
Woonsocket, R. I	3,500	.....	600	.....	.....	1,500	.....	.....	.....	.....	1,725	1,725	2,275	1,725	.....	.....	.....	.....	.....	.....	.....	.....	91
Charleston, S. C	5,400	.....	.....	.....	2,000	1,200	.....	.....	1,650	.....	1,800	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sioux Falls, S. Dak	4,750	.....	2,800	.....	2,000	1,200	.....	$1,700	.....	.....	1,700	2,000	.....	2,350	.....	3,600	$1,800	.....	.....	.....	2,000	.....	.....
Knoxville, Tenn	4,750	.....	.....	.....	2,400	1,200	$1,250	.....	.....	.....	1,500	1,500	2,400	2,000	.....	1,600	.....	.....	.....	.....	.....	.....	1,800
Beaumont, Tex	6,000	.....	2,100	(13)	2,250	1,600	.....	.....	.....	2,000	1,850	1,850	2,250	2,000	1,800	1,400	.....	.....	.....	.....	500	.....	.....
El Paso, Tex	5,600	4,000	.....	.....	3,000	1,200	1,500	.....	1,900	1,800	1,800	1,800	2,100	1,450	.....	.....	.....	.....	2,600	.....	(11)	.....	.....
Galveston, Tex	.....	4,800	1,350	.....	.....	.....	900	.....	1,620	.....	1,620	1,620	2,000	1,350	.....	2,000	.....	.....	.....	.....	200	.....	900
Ogden, Utah	4,600	2,500	1,920	.....	1,920	1,500	.....	.....	2,500	.....	2,700	2,000	2,500	1,800	.....	2,100	.....	.....	.....	2,100	.....	.....	.....
Salt Lake City, Utah	6,000	4,500	5,000	(13)	4,200	2,600	.....	3,600	.....	(1)	2,650	2,900	2,700	2,100	.....	2,700	.....	$3,100	.....	3,600	(15)	.....	1,800
Newport News, Va	5,000	.....	3,000	(13)	(13)	.....	.....	.....	2,000	.....	1,700	1,700	.....	.....	2,000	.....	.....	.....	.....	.....	.....	.....	.....
Portsmouth, Va	4,500	.....	1,800	.....	.....	.....	.....	.....	.....	.....	.....	1,500	2,100	1,700	.....	2,100	.....	.....	.....	.....	.....	.....	1,000
Petersburg, Va	.....	.....	500	.....	1,800	.....	.....	.....	.....	.....	1,300	1,400	2,000	1,300	.....	1,800	.....	.....	.....	.....	550	.....	1,400
Roanoke, Va	4,500	.....	2,100	(13)	(13)	.....	.....	.....	1,710	.....	1,440	1,620	1,665	1,305	.....	.....	.....	.....	.....	.....	640	.....	.....
Bellingham, Wash	4,000	.....	2,400	(13)	1,800	900	.....	.....	.....	.....	1,860	2,100	.....	1,860	.....	2,100	.....	.....	.....	.....	300	.....	.....
Everett, Wash	4,000	.....	2,100	.....	2,100	1,200	.....	.....	.....	.....	1,860	2,260	.....	1,960	2,300	1,860	.....	.....	2,160	.....	300	.....	.....

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Tacoma, Wash	6,120	.....	4,320	(12)	3,120	1,500	.....	.....	.....	2,640	2,520	2,820	2,640	2,670	(3)	.....	.....	.....	.....	.....	.....	.....	.....	3,600
Clarksburg, W. Va	5,000	.....	700	.....	3,000	900	.....	.....	.....	2,050	1,800	1,900	1,650	.....	2,250	.....	.....	.....	.....	.....	.....	.....	.....	1,000
Huntington, W. Va	6,000	.....	720	2,000	1,700	1,800	.....	.....	2,100	2,100	2,100	2,750	2,100	2,750	(9)	.....	.....	.....	.....	.....	.....	.....	.....	2,000
Wheeling, W. Va	5,000	.....	2,000	.....	.....	1,600	.....	.....	.....	2,300	2,000	2,500	2,100	.....	2,400	.....	.....	.....	.....	.....	.....	.....	.....	1,200
Green Bay, Wis	3,700	3,700	.....	.....	2,500	1,000	.....	.....	1,400	1,600	1,550	2,000	1,500	.....	1,550	.....	.....	3,400	3,400	3,400	3,400	.....	.....	.....
La Crosse, Wis	6,000	3,100	2,250	.....	1,200	2,500	(5)	(5)	(5)	2,100	2,100	3,000	2,100	.....	2,500	(5)	.....	.....	3,400	(5)	.....	.....	.....	.....
Madison, Wis	6,000	3,000	.....	2,400	(5)	1,600	.....	.....	.....	2,100	{1,900 / 2,100}	2,900	2,100	.....	(28)	.....	.....	4,000	(11)	(11)	1,800	2,500		
Oshkosh, Wis	4,000	.....	2,300	(13)	.....	1,600	.....	1,900	.....	1,900	1,900	3,200	.....	3,000	.....	.....	.....	(28)	.....	.....	.....	.....	.....	.....
Racine, Wis	6,000	2,500	2,500	(13)	2,000	2,000	.....	2,250	2,150	2,250	2,250	.....	2,250	2,850	.....	.....	.....	3,400	(11)	(11)	.....	4,000		
Sheboygan, Wis	4,000	.....	.....	.....	.....	1,200	.....	2,300	.....	2,300	1,900	(11)	.....	2,200	.....	.....	.....	3,500	(11)	(11)	.....	.....		
Superior, Wis	4,000	.....	3,500	.....	.....	1,200	.....	2,000	.....	2,400	(28)	3,000	.....	1,600	.....	.....	.....	3,000	(11)	.....	.....	.....		

1 Superintendent acts.
3 Same as director of play.
9 The assistant superintendent of schools.
10 Primary supervisor.
11 Director of vocational education.
12 Secretary of board.
13 Director of continuation schools.
28 Supervisor of manual training.
30 Director of high school and vocational department combined, $2,400; elementary department, $1,750.

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Cities of 25,000 to 49,999 population.

Officers.	Minimum.	Lower quartile.	Median.	Upper quartile.	Maximum.
Superintendent of schools	$2,500	$4,200	$5,000	$5,500	$7,100
Assistant superintendent	1,200	2,400	3,050	3,600	5,500
Secretary to school board	100	1,150	2,000	2,800	4,500
Business manager	2,100	2,325	2,500	3,325	3,600
Superintendent of buildings	800	1,800	2,000	2,500	4,500
Chief attendance officer	500	1,200	1,400	1,700	2,500
Medical inspector	300	850	1,200	2,000	3,000
Supervisors:					
Kindergarten	900	1,250	1,635	1,850	2,400
Primary	1,500	1,900	2,275	2,500	3,000
Intermediate and grammar	1,400	1,700	2,200	2,700	3,100
Music	1,215	1,725	1,925	2,300	3,600
Art	1,000	1,650	1,900	2,150	3,550
Manual training	1,500	2,000	2,250	2,600	3,600
Home economics	1,300	1,650	1,850	2,200	4,635
Play	1,200	1,600	1,700	1,700	3,000
Physical education	1,350	1,800	2,100	2,500	3,900
Educational tests	1,500	1,500	1,800	2,400	2,500
Vocational education	1,500	2,200	3,000	3,400	4,400
Continuation schools	1,500	1,700	2,160	2,650	3,400
Evening schools	300	400	1,500	2,100	3,400
Special classes	1,500	1,600	1,800	2,000	2,500

Cities of 50,000 to 100,000 population.

Officers.	Minimum.	Lower quartile.	Median.	Upper quartile.	Maximum.
Superintendent of schools	$3,450	$5,000	$6,000	$6,250	$10,000
Assistant superintendent	2,000	2,670	3,450	4,000	5,500
Secretary of school board	350	2,100	3,000	3,600	5,000
Business manager	2,000	2,200	3,000	3,800	4,200
Superintendent of buildings	1,200	2,350	2,780	3,000	4,200
Chief attendance officer	1,000	1,400	1,700	2,000	2,900
Medical inspector	300	1,000	1,800	2,000	4,392
Supervisors:					
Kindergarten	1,250	2,150	2,285	2,500	2,820
Kindergarten-primary	1,400	2,250	2,500	2,900	3,300
Primary grades	1,650	1,860	2,250	2,700	3,300
Intermediate and grammar	1,800	2,300	2,500	3,000	3,300
Music	1,440	2,100	2,400	2,600	3,600
Art	1,500	2,000	2,300	2,600	3,600
Manual training	1,000	2,400	2,700	3,000	4,000
Home economics	1,305	2,000	2,200	2,600	3,260
Play	900	2,268	2,550	3,200	4,250
Physical education	1,200	1,800	2,500	2,800	5,000
Education and psychological tests	1,000	2,100	2,350	2,860	3,380
Vocational education	1,320	2,600	3,000	3,600	4,800
Continuation schools	1,090	2,000	2,550	3,000	4,000
Evening schools	240	540	1,440	2,700	3,000
Special classes	1,200	1,600	1,850	2,200	2,650

Salaries in detail for cities of over 100,000 population.

AKRON, OHIO.

Superintendent of schools	$9,000
Superintendent emeritus	8,000
Assistant superintendent	5,500
Business manager	5,500
Superintendent of maintenance	3,600
Director of—	
Research	3,600
Trade extension	3,200
Americanization	3,000
Chief architect	4,000
Head of attendance	2,000

AKRON, OHIO—continued.

Supervisor of—	
Vocal music	$2,600
Instrumental music	2,600
Art	2,600
Physical education	2,600
Two superintendent's secretaries, each	1,920
Pay roll clerk	1,800
Clerk of sinking fund	2,040
Stock clerk	1,920
Stenographer	1,500
Typist	1,080

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Salaries in detail for cities of over 100,000 population—Continued.

AKRON, OHIO—continued.

Warehouse clerk	$1,500
Assistant superintendent's secretary	1,200
Clerk in—	
Maintenance department	1,500
Attendance department	1,500
Americanization department	1,620
Bureau of research	1,080
Architect's office	1,200

ALBANY, N. Y.

Superintendent of schools	6,000
Superintendent of school buildings	3,050
Clerk of board	2,500
Principal at large	3,200
Requisition clerk	1,625
Three attendance officers, each	1,550
Supervisor of—	
Drawing	3,200
Music	3,050
Special classes	3,200
Kindergarten	2,500
Handwork	2,500
Primary grades	2,500
English	2,500
Penmanship	2,500
Americanization	2,000
Director of—	
Physical education	3,400
Vocational education	3,400
Assistant supervisor of—	
Special classes	2,000
Vocational education	2,000
Physical education	1,900
Division of library, textbooks and records:	
Head of division	2,200
One assistant	1,800
Three assistants, each	1,475
One assistant	1,400
One assistant	1,175
Two clerks ($3.50 a day), each about	1,092
Teacher-clerk, physical education dept.	1,100

ATLANTA, GA.

Superintendent	5,000
Asst. superintendent and business manager	3,600
Supervisor (first year)	1,736
Supervisor (second year)	1,986
Supervisor (third year)	2,186
Assistant supervisor (first year)	1,536
Assistant supervisor (second year)	1,586
Assistant supervisor (third year)	1,636
Compulsory attendance officer	1,080
Superintendent of repairs	2,400
Stenographers, each	1,200
Clerks, each	1,200

BALTIMORE, MD.

General administration:	
Departmental secretary	2,750
Principal account clerk	2,100
Senior stenographer	1,900
Junior typist	1,100
Supervisor of school buildings	2,300
Janitor	1,000
Stenographer	1,200

BALTIMORE, MD.—continued.

Administrative:	
Superintendent	$8,000
First assistant superintendent	6,000
Assistant superintendent	6,000
Assistant superintendent	5,500
Senior clerk	1,500
Junior clerk	1,100
Senior stenographer	1,300
Three junior clerks, each	1,200
Telephone clerk and typist	900
Statistician	1,800
Supervisor of—	
Manual training and teachers	2,900
Music	2,500
Drawing	2,000
Sewing	2,000
Physical culture	2,000
Kindergarten-primary	2,100
Chief attendance officer	1,500
Fourteen assistant attendance officers, each	1,000
Junior typist	1,200
Four supervisors of elementary grades, each	2,000
One assistant supervisor of music	1,700
Three assistant supervisors of music, each	1,550
Two assistant supervisors of music, each	1,450
Four assistant supervisors of music, each	1,350
Two assistant attendance officers, each	950
Substitute attendance officer	500

BIRMINGHAM, ALA.

Superintendent of public schools	7,500
Assistant superintendent	5,000
Secretary, board of education	2,700
Auditor and statistician	1,500
Bookkeeper	1,600
Stenographer to secretary	1,440
Stenographer to supt	1,500
Assistant stenographer and filing clerk	1,200
Supervisor, attendance department	2,000
Assistant supervisor, attendance department	1,200
Supervisor of music	2,500
Assistant supervisor of music	1,500
Supervisor of—	
Drawing	2,200
Home economics	2,500
Manual arts	2,400
Physical training	2,700
Penmanship	2,000
Primary work	2,200
Parental school	2,100
Director, vocational department	3,400
Medical inspector	2,700
Superintendent of buildings	2,400
Superintendent, warehouse and repair shop	1,500

BOSTON, MASS.

Superintendent	10,000
Thirty assistants to superintendent	28,572

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Salaries in detail for cities of over 100,000 population—Continued.

BOSTON, MASS.—continued.

Five assistant superintendents	$27,480
Secretary	4,740
Assistant secretary	2,700
Seven assistants to secretary	7,908
Business agent	4,740
Chief accountant, 22 assistants and 2 chauffeurs to business agent	34,392
Schoolhouse custodian	3,000
Clerk to schoolhouse custodian	1,116
City treasurer, custodian of the retirement fund	1,500
Telephone operator	720
Substitute telephone operator	300
Officers, clerks, assistants, and stenographers	132,309
Chief attendance officer	2,880
Twenty-four attendance officers	39,278
Director of—	
Department of manual arts	3,540
Dept. of household science and arts	2,820
Department of music	3,540
Evening schools	3,697
Kindergartens	2,740
Special classes	2,260
Salesmanship	2,100
Penmanship	2,004
Vocational guidance	2,292
Chief examiner, educational investigation and measurement	3,510
Director of medical inspection	3,000
Supervising nurse	1,620
Director of physical training	3,340
Director of extended use of public schools	3,000

BRIDGEPORT, CONN.

Superintendent	6,000
Assistant superintendent	4,000
Second assistant superintendent	4,000
Superintendent's secretary	1,600
Assistant secretary of board	2,600
Agent of board	2,400
Purchasing agent	1,400
Bookkeeper	1,450
Pay-roll clerk	1,300
Stenographer	960
Stenographer	800
Stenographer	900
Switchboard operator	800
High-school principal's secretary	1,500
Stenographer for high school	700
Stenographer for high school	650
Supervisor of—	
Art	2,300
Art	1,970
Penmanship	1,950
Music	2,500
Music	2,300
Physical education	2,60
Grades	2,900

BUFFALO, N. Y.

Superintendent	10,000
Three deputy superintendents, each	4,800
Secretary to superintendent	3,000

BUFFALO, N. Y.—continued.

General supervisor	$3,200
Secretary, board of education	3,000
Superintendent, janitorial service	2,500
Supply clerk	1,800
Chief clerk	2,000
Three clerks, each	1,200
Clerk (part-time school)	1,500
Manager, stenographic department	1,900
Stenographer to superintendent	1,700
Stenographer to board of education	1,500
Two stenographer clerks, each	1,500
Two stenographer clerks, each	1,200
Storekeeper	1,500
Assistant storekeeper	1,200
Chauffeur	1,200
Three helpers in storeroom, each	800
Switchboard operator	1,100
Messenger	520
Chief attendance officer	1,800
Thirteen attendance officers, each	1,600
Two attendance officers, each	1,000
Inspector, trades law	1,700
Psychological examiner	1,600

CAMBRIDGE, MASS.

Superintendent	6,600
Business agent	3,000
Superintendent of buildings and grounds	2,500
Secretary to school committee, per week	22.90
Assistant superintendent, director of continuation and evening schools	4,220
Supervisor of—	
Primary schools	2,460
Kindergartens and special classes	2,460
Director of art education	3,220
Assistant director of art education	1,596
Director of music	3,220
Two assistants, each	1,596
Director of physical education	2,460
Assistant	1,824
Secretary to superintendent, per week	26.50
Clerk, per week	26.50
Temporary clerk, certificate division, per week	15.00
Seven attendance officers, each	1,800
Two clerks, each per week	26.50
One clerk, per week	31.00
Porter	1,300

CHICAGO, ILL.

Superintendent of schools	12,000
First assistant	8,100
Three assistants, each	7,200
Secretary to board of examiners	7,200
Examiner	6,000
Ten district superintendents, each	6,000
Supervisor of—	
Music	3,750
Art	3,750
Blind	3,500
Household arts	4,500
Technical work in high schools	4,300
Commercial work in high schools	4,300
Physical education in elementary schools	4,500

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Salaries in detail for cities of over 100,000 population—Continued.

CHICAGO, ILL.—continued.

Director of—	
School extension	$5,000
Special schools	5,000
Elementary manual training	5,000
Child study	4,900
Vocational guidance	5,000
Chief compulsory officer	5,300
Principal continuation school	6,120
Business manager	10,000
Architect	8,000
One hundred and seventy-four clerks from $900 to $3,000.	

CINCINNATI, OHIO.[1]

Superintendent	10,000
Assistant superintendent	5,000
Assistant superintendent	3,500
Director of—	
Kindergartens	3,000
Vocational education	3,100
Continuation schools	3,100
Household arts	3,200
Industrial arts	3,500
Art	3,600
Music	3,600
Penmanship	3,668
Physical education	3,600
Civic and vocational league	2,200
Executive secretary	1,500
Superintendent's secretary	1,500
Stenographer	1,200
Two stenographers, each	1,000
Stenographer	900
Office attendant and telephone operator	900
Assistant director in charge of attendance department	1,500
Court attendance officer	1,500
Attendance officer	1,800
Two attendance officers, each	1,600
Attendance officer	1,500
Attendance officer	1,200
Attendance officer	1,300
Stenographer	900
Assistant director of vocation bureau	2,200
Two psychological laboratory assistants, each	1,400
Two psychological laboratory assistants, each	1,200
Social investigator	1,300
Placement secretary	1,900
Employment certificate assistant	1,500
Placement assistant	1,500
Placement assistant	1,400
Two stenographers, each	1,200
Stenographer	780
Clerk	3,500
Deputy clerk	2,200
Stenographer	1,200
Stenographer	1,100
Business manager	5,000
Clerk	3,500

CINCINNATI, OHIO—continued.

General clerk	$1,600
Clerk-stenographer	1,250
General clerk-stenographer	1,350
Stenographer	950
Clerk-typist	950
Stores bookkeeper	1,400
Assistant stores bookkeeper	1,200
Custodian	1,580
Assistant custodian	1,400
Visiting engineer	2,700
Assistant stores keeper	1,380
Assistant stores keeper	1,200
Telephone operator	800

CLEVELAND, OHIO.

Superintendent of schools	10,000
Three assistant superintendents, each	6,500
Two assistant superintendents, each	5,500
One assistant superintendent	5,000
Director of—	
French and Spanish	4,000
English	4,250
Mathematics	
Secretary to superintendent	4,000
Supervisor of substitute teachers	2,000
Supervisor of appointments	2,750
Two assistant supervisors of appointments, each	1,600
Director of school housing	4,500
Assistant director of school housing	3,500
Assistant director of school housing	2,750
Director of reference and research	4,500
Assistant director of reference and research	2,400
Assistant director of reference and research	2,200
Supervisor of evening schools	3,850
Assistant supervisor of evening schools	2,750
Supervisor of community centers	3,300
Assistant supervisor of community centers	2,750
Supervisor of school gardens	3,300
Supervisor of medical inspection	3,300
Assistant supervisor of medical inspection	2,500
Twenty-three school doctors, each	1,282
Assistant supervisor of school nurses	2,500
Two school nurses, each	1,440
Three school nurses, each	1,670
Two school nurses, each	1,610
Three school nurses, each	1,320
One school nurse	1,382
Five school nurses, each	1,550
Seven school nurses, each	1,730
One school nurse	1,370
Three school nurses, each	1,490
Three school nurses, each	1,200
One school nurse	1,210
Assistant supervisor of dental clinics	2,000
Nine school dentists, each	1,425
Four school dentists, each	2,850
Seven dental nurses, each	760
One dental nurse	950
Assistant supervisor, orthopedics	2,479
Director of publications	4,000

[1] Chief medical inspector, in charge of medical, dental, and nursing service in the schools, is paid by board of health.

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Salaries in detail for cities of over 100,000 population—Continued.

CLEVELAND, OHIO—continued.

Assistant director of publications	$1,600
Director of attendance, census, and vocational guidance	4,000
Assistant director of attendance, census, and vocational guidance	3,000
Assistant director of attendance, census, and vocational guidance	2,100
One attendance officer	3,035
Two attendance officers, each	2,500
Three attendance officers, each	2,000
Three attendance officers, each	1,900
Two attendance officers, each	1,700
Twenty attendance officers, each	1,500
General supervisor, elementary schools	3,680
General supervisor, elementary schools	3,560
General supervisor, elementary schools	3,200
General supervisor, elementary schools	3,060
General supervisor, elementary schools	3,000
Supervisor of music	3,680
Four assistant supervisors of music, each	2,500
Supervisor of chorus music	3,000
Supervisor of art	3,560
Five assistant supervisors of art, each	2,500
One assistant supervisor of art	1,350
Supervisor of writing	3,560
Three assistant supervisors of writing, each	2,500
Supervisor of kindergartens	3,000
Supervisor of physical training	3,560
Three assistant supervisors of physical training, each	2,705
Supervisor exceptional classes	3,000
Assistant supervisor exceptional classes	2,045
Assistant supervisor exceptional classes	1,200
Assistant supervisor psychological clinics	2,675
Assistant supervisor psychological clinics	1,800
Assistant supervisor psychological clinics	1,350
Assistant supervisor psychological clinics	1,320
Assistant supervisor speech defects	2,170
Supervisor of manual training	3,680
Supervisor of home economics	3,560
Assistant supervisor of home economics	1,800
Supervisor of lunch rooms	3,020
Supervisor of blind classes (⅓ time)	3,680
Assistant supervisor of blind classes (⅓ time)	2,500
Director of board of examiners	3,500
Assistant secretary to Supt	2,400
Clerk to superintendent	2,640
Stenographer	1,600
Thirteen stenographers, each	1,425
Nine stenographers, each	1,350
Two clerks, each	1,680
One clerk	1,470
Ten clerks, each	1,300
One clerk	960
One Braille stereotyper	1,656
Two Braille stereotypers, each	1,488

COLUMBUS, OHIO.

Executive department:	
Superintendent	7,500
Assistant superintendent	4,500
Assistant superintendant	4,000
Secretary	1,300

COLUMBUS, OHIO—continued.

Executive department—Continued.	
Clerk	$1,200
Clerk	1,080
Business department:	
Clerk (ex officio treasurer)	4,000
Assistant clerk	2,500
Assistant clerk	2,000
Assistant clerk	1,560
Stenographer	1,080
Storekeeper	1,600
Assistant storekeeper	1,560
Architect's office:	
Architect	2,880
Two draftsmen, each	3,000
Two draftsmen, each	2,400
One draftsman	2,700
Building supervisor	3,000
Building supervisor	2,400
Electrical engineer	2,400
Heating engineer	3,000
Building and repair department:	
Superintendent of buildings	3,000
Foreman painter	2,160
Shopman	1,704
Electrician	1,704
Three carpenters, each	1,704
Public school library:	
Librarian	2,280
Two assistant librarians, each	1,600
Two assistant librarians, each	1,200
Three high-school librarians, each	1,600
Two high-school librarians, each	1,500
Attendance department:	
One attendance officer	1,560
One attendance officer	1,800
Two attendance officers, each	1,380
Board of examiners:	
Three examiners, each	200
Supervisors:	
Manual training	2,250
Assistant supervisor, home economics	1,875
Three assistant supervisors, of music, each	1,875
Assistant supervisor, physical education	1,875
Americanization	2,187
Art	2,625
Assistant supervisor, art	2,125
Kindergarten	2,125
Nature study	2,187
Journalism	2,086
School physician	3,600
Two nurses, each	1,300
Three nurses, each	1,100

DALLAS, TEX.

Superintendent of schools	7,200
Assistant superintendent of schools	6,000
Private secretary	2,000
Supervisor of—	
High-school instruction	5,000
Intermediate grades	3,600
Primary work	3,000

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Salaries in detail for cities of over 100,000 population—Continued.

DALLAS, TEX.—continued.

Supervisor of—Continued.	
Music	$3,000
Drawing and writing	3,000
Assistant supervisor of music	2,000
Assistant supervisor of drawing and writing	2,000
Supervisor of physical training, primary	2,000
Stenographer	1,200
Statistical clerk	1,200
Business administration:	
Secretary of board of education (business manager)	4,800
Purchasing agent	3,000
Supervisor of buildings	3,000
Teller	1,800
Bookkeeper	1,800
Stenographer	1,500
Clerk	900

DAYTON, OHIO.

Supervisor of—	
Grade schools (part-time, also principal of one of the elementary schools)	750
Physical training	2,050
Kindergartens	1,750
Drawing and industrial work	2,050
Assistant	1,550
Expression	2,050
Penmanship	2,050
Vocal music	2,550
Two assistants, each	1,400
Orchestras	2,550
Manual training	2,550
Home economics	2,550
Truant officer	1,920
Truant officer (also has charge of compulsory continuation school)	2,050
Health Inspector [1]	
Business manager [2]	
Clerk [2]	4,000
Assistant clerk	1,800
Stenographer	1,200
Superintendent of construction (also has office of his own)	5,000
Clerk	1,430
Superintendent of buildings	2,520
Stock clerk and purchasing agent	2,200
Two clerks (stock room), each	1,200 1,080
Stenographer (stock room)	1,200
Secretary to superintendent of instruction	1,800
Assistant office of superintendent of instruction	1,200

DENVER, COLO.

Superintendent's office:	
Superintendent	8,000
Assistant superintendent	5,000
Assistant to superintendent	4,100
Secretary in charge of supply teachers	2,100

DENVER, COLO.—continued.

Superintendent's office—Continued.	
Chief clerk	$2,400
Clerk	1,800
Three clerks, each	1,600
Clerk	1,500
Clerk	1,040
Clerk	780
Telephone:	
Operator	1,020
Operator	960
Business office:	
Chief engineer	5,000
Chief clerk	2,400
Clerk	1,900
Clerk	1,500
Clerk	1,300
Clerk	1,180
Two clerks, each	1,100
Storehouse:	
Storekeeper	2,000
Clerk	1,100
Clerk, part-time	300
Clerk	1,200
Expressman	2,200
Departments:	
Director, measurements and standards	3,240
Special teacher, speech	1,900
Special teacher, speech	1,740
Special teacher, special schools	1,840
Director, penmanship	2,640
Special teacher, penmanship	1,900
Girls' handicraft director	2,540
Special teacher, girls' handicraft	1,980
Director of art education	2,590
Special teacher, art education	1,440
Special teacher, art education	1,960
Director of—	
City gardens	2,440
Manual training	2,940
Physical education	2,540
Lunch rooms	2,540
Domestic science	2,740
Cadet corps	1,970
Two special teachers, cadet corps, each	1,400
Director of music	3,500
Special teacher, music	1,840
Two special teachers, music, each	1,440
Special teacher, music	1,300
Special teacher, music	1,200
Director of playgrounds	1,840
Special teacher, playgrounds	1,500
Director of attendance	2,400
Four attendance officers, each	1,400

DES MOINES, IOWA.

Superintendent of schools	7,500
Director of—	
Elementary education	4,000
Kindergartens	2,412

[1] This work is now under the charge of the city department of health. The board pays $100 per month for the services of five district physicians, part-time.

[2] The board has no business manager. The financial matters are taken care of by the clerk, who is also treasurer of the board. Clerk of board of education, construction department, stock clerk, and purchasing department are responsible directly to board of education.

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Salaries in detail for cities of over 100,000 population—Continued.

DES MOINES, IOWA—Continued.

Director of—Continued.	
Industrial education	$3,400
Business education	3,400
Extension activities and Americanization work	2,100
Research	2,500
Exceptional children	2,000
Supervisor of—	
Primary grades	3,000
Home economics	2,340
Art	2,412
Assistant	2,000
Music	2,700
Two assistants, each	1,540
Penmanship	2,167
Director, department of health (half time)	1,758
School dentist (half time)	1,758
Oral hygienist	1,760
Clerk	1,080
Supervisor, physical education	2,527
Supervisor, school nurses	2,500
Secretary to superintendent	2,400
Clerk	1,380
Four stenographers from $960 to $1,500.	
Information clerk	960
Director, attendance and employment	3,500
Two attendance officers, each	2,400
Chief clerk	1,400
Assistant clerk	1,200
Secretary and business manager	4,200
Bookkeeper	2,000
Two clerks from $1,200 to $1,380.	
Stenographer	1,320
Superintendent, buildings and grounds	3,500
Clerk	1,500

DETROIT, MICH.

Superintendent	$9,000
Deputy superintendent	7,680
Two assistant superintendents, each	6,600
Director of—	
Ins. normal tr. and research	6,000
Education expenditures	6,000
Statistics	5,100
Special education	3,600
Intermediate school	4,000
Assistant director of—	
Industrial art	5,000
Physical education	3,000
Educational research	4,800
Inspector, teachers	4,500
Asst. supr., statistics and reference	3,000
Asst. supr., educational research	3,000
Supervisor of—	
Arithmetic	4,000
Comp. education	4,000
Music	4,000
Elementary music	3,500
Art	4,000
Penmanship	4,000
Geography	4,000
English	4,000
Kindergarten primary grades	4,000
Visual education	3,600
Special education	4,800

DETROIT, MICH—Continued.

Supervisor of—Continued.	
Ungraded classes	$4,000
Girls' activities	4,000
Mech. drawing and man. tr	4,000
Domestic arts	4,000
Domestic science	4,000
Industrial training	4,000
Phy. education high sch	4,000
Boys' athletics	4,000
Seven asst. supr. physical ed., each	2,500
Two asst. supr. music, each	2,500
Four asst. supr. art, each	2,500
Two asst. supr. penmanship, each	2,500
Four asst. supr. English, each	2,500
Three assit. supr. kindergarten, each	2,500
Four asst. supr. special ed., each	2,500
Two dist. attendance officers, each	3,000
Two dist. attendance officers, each	2,500
Attendance officer	1,760
Business manager	5,199
Two clerks (chief clerks), each	3,000
One clerk (chief clerk)	2,400
One clerk (chief clerk)	1,920
Two clerks (chief clerks), each	1,680
One clerk	2,000
One clerk	2,100
Two clerks, each	1,740
One clerk	1,620
Seven clerks, each	1,560
Seven clerks, each	1,500
Five clerks, each	1,440
One clerk	1,380
Three clerks, each	1,320
Two clerks, each	1,200
Two clerks, each	1,080
One clerk	1,020
One stenographer	2,040
Two stenographers, each	1,800
Five stenographers, each	1,680
Two stenographers, each	1,560
Two stenographers, each	1,440
Two stenographers, each	1,320

FALL RIVER, MASS.

Superintendent	5,000
Assistant superintendent	3,400
Primary supervisor	2,160
Primary supervisor	2,280
Supervisor of—	
Household arts	2,120
Drawing	2,880
Assistant	2,000
Reading	2,400
Physical training	2,400
Assistant	1,520
Music	2,880
Secretary	2,200
Seven attendance officers, each	1,800
Supply clerk	1,900
Stenographer	1,600
Stenographer	1,100
Stenographer	900
Clerk	1,200
Clerk	1,100

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Salaries in detail for cities of over 100,000 population—Continued.

HOUSTON, TEX.

Superintendent	$6,000
Superintendent of hygiene	4,200
Business representative, school board	3,600
Superintendent of—	
Music	2,400
Intermediate grades	2,700
Primary grades	2,700
Penmanship	2,500
Art	2,600
Manual training	2,700
Domestic science	2,100
Secretary to superintendent	1,820
Secretary to business representative	1,820
Secretary to manual training director	1,680
Assistant in superintendent's office	870
Manager of free textbooks	2,180
Four nurses, each	1,200
(Ten other nurses employed, but salary paid by the city or by private organizations.)	

INDIANAPOLIS, IND.

Superintendent of schools	8,000
Assistant to superintendent	4,500
Director, dept. of ref. and research	3,600
Director, vocational education	5,000
High school principal	4,300
High school principal	4,500
High school principal	4,800
Principal, normal training school	3,200
Five district superintendents, each	3,600
One district superintendent	4,000
One district superintendent	3,000
Director of—	
Manual training	3,500
Music	3,500
Physical educa. and school hygiene	3,800
Art instruction	3,500
School lunches	3,000
Handwriting	3,000
Supervisor of sewing	2,300
Supervisor of cooking	2,200
Director of attendance department	3,000
Four attendance officers, each	1,500
One attendance officer	1,400
Two attendance officers, each	1,000
One attendance officer	1,760
One attendance officer	1,870
Director, business department	6,000
Assistant, business director	5,000
Superintendent of supply	2,400
Superintendent, buildings and grounds	3,500
Attorney	2,500
Deputy auditor	2,100
County treasurer—by city	1,500
Secretary to supt	1,800
Two stenographers, each	1,300
One stenographer	1,100
One clerk to superintendent	1,800
One clerk	1,400
One clerk	1,300

JERSEY CITY, N. J.

Superintendent of schools	$10,500
Assistant superintendents of schools	5,400
Secretary	3,400
Clerk	2,200
Clerk	1,936
Clerk	1,888
Supervisor of methods in primary dept	3,900
Supervisor of methods in grammar dept	3,500
Assist. supt., grammar and primary dept	3,100
Director of vocal music	3,800
Assistant directors of vocal music	3,100
Supervisor of—	
Classes for pupils mentally defective	2,300
Drawing	4,100
Physical training	3,800
Instruction of pupils defective in speech	2,600
Director, manual tr. and domestic sc	4,100
Chief attendance officer	2,800
Assistant attendance officer	2,500
Sixteen assistant attendance officers, each	1,800
Three assistant attendance officers, each	1,600
Chief clerk attendance department	1,800
Two clerks, each	1,500
Director, medical inspection	2,500
Fourteen assistant medical inspectors, each	900
Fourteen nurses, medical department, each	1,320
Woman medical inspector	1,200
Medical department clerk	2,000
Medical department clerk	1,500
Director of dental hygiene	2,240
Five dentists, each	1,200
Six dental nurses, each	1,320
Dental department clerk	1,500
Secretary of board of education	4,250
Clerk, office of secretary	2,000
Clerk, office of secretary	1,800
Four clerks, office of secretary, each	1,500
Inspector of repairs	2,700
Clerk to inspector of repairs	1,500
Inspector of buildings	2,500
Three inspectors of buildings, each	2,200

KANSAS CITY, KANS.

Superintendent of schools	5,000
Director, continuation schools	4,000
Four district supervisors, each	2,760
One special supervisor	2,388
Four special supervisors, each	2,208
Two stenographers, each	1,800
One stenographer	1,140
One attendance officer	1,560
Three attendance officers, each	1,125
Clerk, board of education	3,000
Bookkeeper	1,800
Switchboard operator	1,320
Stenographer	1,020
Superintendent, buildings and grounds	3,000
Purchasing agent	2,400
Chief engineer	2,100
Bookkeeper	1,680
Supply clerk	[illegible]

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Salaries in detail for cities of over 100,000 population—Continued.

KANSAS CITY, KANS.—continued.

Stenographer	$1,500
Architect	1,200

KANSAS CITY, MO.

Superintendent	7,500
Assistant superintendent	4,740
Assistant superintendent	4,620
District superintendent	3,780
District superintendent	3,720
Director of—	
Vocational education	4,740
Research	4,980
Primary-kindergarten	3,800
Assistant director of research	2,640
Psychologist	3,000
Secretary to superintendent	2,100
Clerk, compulsory education	2,100
Pay-roll clerk	1,800
One stenographer and clerk	1,440
One stenographer and clerk	1,320
Three stenographers and clerks, each	1,200

LOS ANGELES, CALIF.

Superintendent	8,000
Deputy superintendent	4,800
First assistant superintendent	4,600
Second assistant superintendent	4,600
Third assistant superintendent	4,200
Fourth assistant superintendent	4,200
Assistant to superintendent	2,400
Assignment secretary	2,238
Two clerks, each	1,500
One clerk	1,440
Two clerks, each	1,320
Three stenographers, each	1,320
Junior clerk	1,025
Chauffeur	1,500
Chief telephone operator	1,260
Three assistant telephone operators, each	1,140
Evening telephone operator	360
Business Manager's Department.	
Business manager's office:	
Business manager	5,000
Clerk	2,220
Clerk	2,100
Stenographer	1,320
Clerk	1,320
Chauffeur	1,500
Supply department:	
Supply clerk	2,220
Assistant to supply clerk	1,680
Requisition clerk	1,500
Head stock and record clerk	1,500
Stenographer and clerk	1,440
Clerk	1,200
Stenographer and clerk	1,200
Stenographer and clerk	1,080
Filing clerk	1,080
Two stock record clerks, each	1,200
Receiving clerk	1,560
Shipping clerk	1,560
Six stock clerks, each	1,200
Janitor	1,320

LOS ANGELES, CALIF.—continued.

Purchasing department:	
Chief clerk	$1,920
Stenographer and clerk	1,380
Stenographer and clerk	1,320
Clerk	1,200
Stenographer and clerk	1,200
Telephone operator	1,260
Military equipment division:	
Stock clerk	1,260
Helper	1,080
Clerk	2,100
Shop department:	
Clerk	2,380
Four district foremen, each	2,160
Yard foreman	2,160
Chief electrician	2,160
Stenographer	1,320
Night watchman	1,320
Five truck drivers, each	1,440
Clock and bell foreman	1,920
Secretary's office:	
Secretary	3,900
Assistant secretary	2,160
Chief clerk	2,160
Bookkeeper	1,680
Two minute clerks, each	1,500
Correspondence clerk	1,500
Five stenographers and clerks, each	1,320
Clerk	1,140
Auditor's office:	
Auditor	3,900
Deputy auditor	2,220
Assistant to deputy auditor	1,680
Five senior bookkeepers, each	1,680
Two junior bookkeepers, each	1,380
Four assistant bookkeepers, each	1,200
Senior stenographer	1,320
Two junior stenographers, each	1,200
Demand clerk	1,320
Counter clerk	1,260
Timekeeper	1,260
Bookkeeping machine operator	1,025
Messenger and typist	900
Compulsory education and child-welfare department:	
Director	3,600
Assistant director	2,400
Division supervisor	2,040
Chief attendance officer	2,000
Twelve attendance officers, each	920
Clerk	1,380
Clerk	1,140
Two clerks, each	1,020
Department of psychology and educational research:	
Director	3,600
Assistant director	2,964
Secretary	1,320
Clerk	1,200
Health and development department:	
Director	3,900
Nine physicians, each	2,640
Four dentists, each	2,640

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Salaries in detail for cities of over 100,000 population—Continued.

LOS ANGELES, CALIF.—continued.

Health and development department—con.	
Eleven senior nurses, each	$1,440
Three junior nurses, each	1,320
Clerk	1,200
Matron	1,200
Dental assistant	960
Dental assistant	1,020
Department of part-time instruction:	
Director	3,600
Two coordinators, each	3,300
Elementary school library:	
Supervising librarian	2,400
Two assistant librarians, each	1,560
Assistant librarian	1,620
Clerk	960
Clerk	720
Supervisor of—	
Home economics	3,840
Drawing	3,840
Physical training	3,840
Vocational training	3,840
Immigration	3,840
Kindergarten	3,840
Manual arts (sloyd)	3,840
Music	3,840
Orchestra	3,840
Nature study	3,840
Penmanship	3,840
Modern languages	3,840
Agriculture	3,840
Cardboard construction	3,600
Primary manual arts	3,600
Forty-three assistant supervisors, each	2,964
Five clerks, each	1,200

LOUISVILLE, KY.

Superintendent	5,000
Secretary to superintendent	2,400
Stenographer	1,608
Stenographer	936
Librarian	1,140
Telephone operator	1,020

LOWELL, MASS.

Superintendent of schools	5,000
Clerk	1,400
Clerk	1,000
Attendance officer	3,000
Attendance officer	2,400
Attendance officer	2,000
Attendance officer	1,800
Clerk, attendance office	1,200
Business agent	3,100
Clerk, business agent's office	1,200
Stock clerk	1,600

MEMPHIS, TENN.

Superintendent	5,000
Supervisors, each	1,980
Attendance officers, each	1,320
Secretary to school board	3,000
Secretary to superintendent of schools	1,620
Clerks (average salary)	1,200

MILWAUKEE, WIS.

Superintendent of schools	$9,000
Asst. supt. of schools	5,000
Asst. supt. of schools (primary dept.)	4,520
Assistant to superintendent	3,840
Supervisor of—	
Industrial education	5,500
Street trades	2,760
Attendance	3,840
Director of—	
Drawing	3,840
Elementary manual training	3,840
Household arts	3,840
Music	3,840
Special classes	3,480
Social centers	2,760
Supervisor of physical training	3,840
Secretary-business manager	7,200
Auditor	3,840
Supply clerk	3,840
Asst. to supt. (extension dept.)	4,200
Athletic director	2,760

MINNEAPOLIS, MINN.

Superintendent of schools	8,000
Assistant superintendent (instructional)	4,500
Assistant superintendent (instructional)	4,000
Assistant superintendent (industrial)	4,500
Assistant superintendent (business)	5,000
Assistant superintendent (office)	3,600
Supervisor of—	
Evening and summer schools	2,500
Domestic science and lunch room	2,500
Drawing	2,750
Music	3,200
Manual training	3,300
Penmanship	2,200
Subnormals-mental examinations	2,300
Blind	1,850
Physical education	3,300
Director, attendance and guidance	3,000
Director, Americanization	2,700
Special teacher of—	
Drawing	2,333
Home economics	2,283
Physical education	2,500
Physical education	2,083
General department:	
Secretary to superintendent	2,400
Asst. secretary, board of education	2,000
Librarian	1,800
Mail and supply clerk	960
Telephone operator	1,200
Telephone operator (assistant)	840
Civil service record clerk	1,500
Information clerk	1,020
Page	810
Page	720
Educational department (instructional division):	
Stenographer to superintendent	1,680
Stenographer to supervisors	1,080
Stenographer-clerk	900
Chief clerk	1,920

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Salaries in detail for cities of over 100,000 population.

MINNEAPOLIS, MINN.—continued.

Educational department (instructional division)—Continued.	
Records of substitute teachers	$1,440
Special activities clerk	1,200
Clerk, teachers' applications	1,200
Clerk, hygiene and physical education	1,380
Clerk, files	960
Attendance and guidance division:	
Supervising attendance officer	1,700
Two attendance officers, each	1,400
Two attendance officers, each	1,350
Vocational guidance	2,658
Vocational guidance	2,040
Vocational guidance	1,560
Vocational guidance	1,320
Supervising census clerk	1,440
Census clerk	1,260
Census clerk	1,200
Census clerk	1,140
Two census clerks, each	1,080
Absentee desk	1,200
Absentee desk	1,140
Statistician	1,900
Stenographer	1,080
Stenographer (guidance)	1,320
Stenographer (physical education and hygiene)	1,020
Finance department:	
Auditor	3,300
Two accountants, each	1,680
Pay rolls clerk	1,920
Pay rolls clerk (assistant)	1,020
Stenographer	1,380
Business department:	
Assistant business superintendent	2,460
Secretary to business superintendent	1,500
Statistical eng., real est., ins.	2,100
Purchase requisition clerk	2,100
Bookkeeper	1,200
Bookkeeper (lunch rooms)	1,500
Stenographer (purchase requisitions)	1,320
Stenographer (work orders)	1,200
Stenographer	1,260
Textbook clerk	1,200
Textbook clerk	1,140
Invoice clerk	1,860
Invoice clerk	1,440
Invoice clerk	1,140
Cost records clerk	1,260
Stock record clerk	1,140
Stock adjustment clerk	1,380
File clerk	1,080
One clerk	1,140
Three clerks, each	1,020
One clerk (lunch rooms)	960
Bureau of buildings division:	
Building inspector	2,220
Architectural engineer	3,600
Architectural designer	2,700
Senior architectural draftsman	2,700
Three architectural draftsmen, each	2,040
Two architectural draftsmen, each	1,980
One architectural draftsman	1,920
One architectural draftsman	1,680
One architectural draftsman	1,620

MINNEAPOLIS, MINN—continued.

Bureau of buildings division—Continued.	
One architectural draftsman	$1,380
Mechanical engineer	3,600
Two mechanical draftsmen, each	1,920
Structural draftsman	2,220
Structural draftsman	1,980
Structural draftsman	1,860
Stenographer	1,380
Buildings and repair division:	
Operating engineer	2,700
Supervisor of buildings	3,600
Foreman of grounds	2,220
Service investigator	1,800
Service inspector	1,920
Accountant	1,680
Pay rolls clerk	1,260
Stenographer	1,320
Stenographer	960
Telephone operator	900
Clerk	1,080
File clerk	1,080
Supply division:	
Stores keeper	2,400
Assistant stores keeper	1,440
Stenographer	1,140
Typist	960
Two clerks, each	1,020
Stock clerk	1,200
Utility man	1,200

NASHVILLE, TENN.

Superintendent of schools	4,800
Supervisor of vocal music	1,700
Supervisor of writing and drawing	1,700
Two academic supervisors, each	1,500
Assistant supervisor, writing and drawing	1,100
Supervisor, grade work (colored)	1,200
Business manager	3,000
Clerk and stenographer	1,440
Clerk and stenographer	980
Clerk and telephone operator	900
Custodian of supplies	1,020
Janitor	540
Truck driver	720
Chief medical inspector	1,250
Two assistant medical inspectors, each	1,100
Assistant medical inspector (colored)	450
Attendance officer	1,440

NEWARK, N. J.

Superintendent	10,000
Three assistant superintendents, each	4,900
One assistant superintendent	4,700
One assistant superintendent	4,500
Clerk to superintendent	4,200
Director of manual arts	3,900
Supervisor of—	
Manual training (grammar)	2,700
Manual training (primary)	2,600
Drawing	2,900
Drawing (alternating schools)	2,500
Domestic art	2,960
Domestic science	2,900
Music (alternating schools)	2,700

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Salaries in detail for cities of over 100,000 population.

NEWARK, N. J.—continued.

Supervisor of—Continued.	
Physical education	$3,900
Athletics (high and elementary schools)	3,000
Penmanship	2,900
Binet schools and classes	2,900
General supervisor	3,200
Director of music	3,200
Assistant supervisor of—	
Drawing	2,400
Drawing	2,000
Domestic art	2,600
Domestic art	2,400
Music	2,600
Music	2,000
Music	1,800
Physical training, 2 each	2,800
Physical training, 2 each	2,600
One clerk	1,920
One clerk	1,740
Two clerks, each	1,440
Three clerks, each	1,140
Two clerks, each	1,020
One clerk	960
One clerk	900
Two clerks, each	840
One clerk	660
One clerk	480
Supervisor of attendance	4,020
Assistant supervisor of attendance	3,000
Attendance officers:	
One officer	2,000
Four officers, each	1,700
One officer	1,640
Four officers, each	1,460
Seven officers, each	1,400
One officer	1,340
Three officers, each	1,280
Two officers, each	1,200
One officer	1,080
One clerk	1,020
One clerk	900
Two clerks, each	840
Supervisor of medical inspection	3,000
Assistant supervisor of medical inspection	1,700
Psychologist	3,500
Assistant psychologist	1,680
Assistant psychologist	1,000
Assistant ophthalmologist	1,140
Two dentists, each	1,020
Seven medical inspectors, each	750
Sanitary inspector	1,440
Fifteen nurses, each	1,720
One nurse	1,660
One nurse	1,600
Four nurses, each	1,480
Three nurses, each	1,420
Three nurses, each	1,360
Two clerks, each	1,020
One clerk	840
Business manager's department:	
Business manager	9,000
Assistant business manager	3,600
Secretary to business manager	3,000
Building inspector	3,000

NEWARK, N. J.—continued.

Business manager's department—Contd.	
Clerk	$1,500
Clerk	900
Clerk	420
Stenographer	1,196
Two drivers, each	1,240
Supply department:	
Superintendent of supplies	4,800
Assistant superintendent of supplies	3,000
Supervisor of equipment	2,600
One clerk	2,000
Two clerks, each	1,920
One clerk	1,500
One clerk	1,440
One clerk	1,400
Two clerks, each	1,140
Three clerks, each	1,020
One clerk	1,000
Two clerks, each	900
One clerk	840
One clerk	420
Secretary's office:	
Secretary, board of education	6,000
Assistant secretary	3,600
Counsel	4,000
One clerk	2,100
One clerk	1,920
One clerk	1,320
One clerk	1,020
Two clerks, each	960
Two clerks, each	780
One clerk	540
One clerk	420
Telephone operator	1,320

NEW BEDFORD, MASS.

Superintendent of schools	5,500
Secretary to superintendent	1,716
Two clerks to superintendent, each	1,300
One clerk to superintendent	936
One clerk to superintendent	780
Assistant superintendent of schools	3,600
Grade supervisor	2,850
Supervisor of—	
Instrumental music	3,200
Vocal music	2,975
Two assistants, each	1,800
Drawing	2,975
Two assistants, each	1,800
Manual training	2,850
Three assistants, each	1,700
Cooking	1,850
Two assistants, each	1,700
Sewing	1,850
Five assistants, each	1,700
Physical training	2,500
Assistant	1,700
School nurses	1,664
Three assistants, each	1,560
Americanization (part-time)	2,200
Department mechanic	2,080
Director of Americanization (part time)	400
Director of continuation schools	3,600
Three clerks, each	780

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Salaries in detail for cities of over 100,000 population—Continued.

NEW BEDFORD, MASS—continued	
Specialist for eyesight classes (part time)	$1,000
Director of community centers	4,000
Two supervisors, each	2,250
One assistant supervisor	1,800
One assistant supervisor	1,000
Clerk	780
NEW HAVEN, CONN.	
Superintendent	5,000
Three assistant superintendents, each	3,950
Supervisor of—	
Music	2,650
Assistant	1,650
Assistant	1,525
Drawing	2,750
Assistant	1,650
Penmanship	2,650
Kindergarten	2,100
Sewing	1,850
Two assistants, each	1,750
Two assistants, each	1,500
One assistant	1,250
One assistant	1,150
Physical training	2,650
Elementary science (part time)	500
Subnormal department	2,100
Cooking	1,500
Cooking, two at	1,600
Cooking, three at	1,250
Cooking, two at	1,050
Shopwork, four at	1,900
Shopwork, one at	1,700
Shopwork, one at	1,650
Shopwork, two at	1,600
Two truant officers (paid by police dept.).	
Health inspectors, nurses, dentists, etc. (paid by health dept.).	
Supply clerk	2,750
Stenographer	1,000
Clerk	900
Superintendent of buildings	3,250
Stenographer and clerk	900
Secretary	3,550
Assistant secretary	2,000
Stenographer and clerk	1,500
Bookkeeper	1,500
Pay-roll clerk	1,400
Bill clerk	1,400
Telephone operator	1,000
Office boy	600
Superintendent's clerks:	
Secretary	2,100
Stenographer and clerk	1,200
Clerk	900
NEW ORLEANS, LA.	
Superintendent	8,000
First assistant	4,500
Second assistant	4,000
Medical inspector	2,400
Assistant medical inspector	1,920
Nurse	1,500
Nurse	1,920
NEW ORLEANS, LA.—continued.	
Attendance officer	$2,700
Assistant attendance officer	1,680
Assistant attendance officer	1,500
Physical training supervisor	3,240
Assistant	2,640
Assistant	2,160
Clerks and stenographers, $1,080 to $1,680.	
Secretary [4]	5,400
Inspector [4]	3,900
Bookkeeper [4]	3,600
Assistant inspector [4]	2,520
Clerks and stenographers,[4] $900 to $1,980.	
NEW YORK, N. Y.	
Supervising force:	
Superintendent	12,000
Eight associate superintendents, each	8,250
District superintendent	7,500
Twenty-six district superintendents, each	6,600
Seven examiners, each	7,700
Director of—	
Reference, research, and statistics	7,000
Attendance	7,700
Assistant	5,500
Lectures	6,600
Assistant	4,500
Art	5,500
Drawing	5,500
Speech improvement	5,000
Music	5,500
Assistant	4,275
Kindergartens	5,000
Two assistants, each	3,780
Sewing, two each	5,000
Cooking	5,000
Assistant	3,780
Physical training	5,500
One assistant	5,500
Three assistants, each	4,500
Recreational activities	7,000
Vocational activities	7,500
Evening and continuation schools	7,000
Modern languages in high schools	5,500
High-school organization	5,500
Assistant director of manual training	4,500
Five inspectors of public-school athletics, each	3,300
Superintendent of libraries	5,000
Library assistant	2,100
Two physicians to examine teaching applicants, each	2,600
Two assistant directors of educational hygiene, each	4,500
Inspector of playgrounds and recreation centers	2,760
Inspector of ungraded classes	5,000
Two assistants, each	3,780
Two medical inspectors of ungraded classes, each	3,600
Inspector of classes for the blind	3,780
Two supervisors of continuation classes, each	3,360

[4] Officers and employees directly responsible to board of education.

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Salaries in detail for cities of over 100,000 population—Continued.

NEW YORK, N. Y.—continued.

Office of superintendent of schools:	
Chief clerk	$4,500
One clerk	5,500
Two clerks, each	4,800
One clerk	3,312
Seven clerks, each	2,820
Ten clerks, each	2,640
Clerk	2,262
Clerk	2,106
Clerk	1,950
Three clerks, each	1,482
Five clerks, each	1,326
Clerk	1,170
Three clerks, each	1,014
Clerk	858
Three clerks, each	702
Four stenographers, each	2,820
Two stenographers, each	2,640
Three stenographers, each	2,262
Three stenographers, each	2,106
Three stenographers, each	1,950
Three stenographers, each	1,794
Eighteen stenographers, each	1,482
Twelve stenographers, each	1,326
One stenographer	1,170
Two typewriter copyists, each	1,326
One typewriter copyist	1,014
Mechanical draftsman	2,106
Printer for the blind	2,106
Board of examiners:	
Clerk	3,600
Clerk	2,640
Clerk	2,262
Two clerks, each	2,106
Two clerks, each	1,950
Six clerks, each	1,326
Clerk	702
Two stenographers, each	2,820
Stenographer	2,640
Stenographer	2,262
Stenographer	1,950
Stenographer	1,794
Two stenographers, each	1,326
Bureau of reference, research, and statistics:	
Clerk	3,528
Two clerks, each	2,640
Two clerks, each	2,106
Clerk	1,950
Clerk	1,794
Clerk	1,638
Three clerks, each	1,482
Four clerks, each	1,326
Clerk	1,014
Three clerks, each	858
Clerk	702
Stenographer	1,950
Stenographer	1,794
Stenographer	1,482
Stenographer	1,326
Stenographer	1,170
Typewriter copyist	1,170
Typewriter copyist	1,014
Statistician	3,312
Statistician	2,820

NEW YORK, N. Y.—continued.

Bureau of reference, research, and statistics—Continued.	
Statistician	$2,262
Six tabulating-machine operators, each	1,482
Tabulating-machine operator	1,170
Bureau of attendance:	
Chief attendance officer	4,752
Two division supervising attendance officers, each	3,672
Twenty-five district attendance officers, each	2,808
One district attendance officer	2,680
Seventy-nine attendance officers, each	1,690
Fifty-one attendance officers, each	1,820
Twelve attendance officers, each	1,950
Eight attendance officers, each	2,080
Four attendance officers, each	2,210
Ninety-nine attendance officers, each	2,340
One clerk	2,640
Four clerks, each	2,106
Two clerks, each	1,950
Five clerks, each	1,794
Eight clerks, each	1,482
Twenty-nine clerks, each	1,326
Three clerks, each	1,170
Ten clerks, each	1,014
One clerk	858
Thirty-nine clerks, each	702
Stenographer	2,820
Stenographer	1,794
Stenographer	1,482
Stenographer	1,326
Telephone switchboard operator	1,482
Offices of district superintendents:	
Three clerks, each	2,106
Six stenographers, each	1,950
Twelve stenographers, each	1,794
One stenographer	1,482
One stenographer	1,170
Teachers' council: Clerk	2,106
Bureau of buildings:	
Superintendent of buildings	11,000
Five deputy superintendents of buildings, each	6,500
One deputy superintendent of building	5,500
Sanitary assistant	5,500
Assistant chief, sanitary division	4,000
Chief of electrical division	5,500
Assistant chief, electrical division	4,200
Chief of furniture division	4,500
Assistant chief, furniture division	4,000
Engineer	3,528
Assistant engineer	4,000
Assistant engineer	4,320
One clerk	5,500
One clerk	3,528
One clerk	2,820
Two clerks, each	2,640
Two clerks, each	2,262
One clerk	2,106
One clerk	1,326
One clerk	1,170
One clerk	1,014
Six clerks, each	[illegible]

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Salaries in detail for cities of over 100,000 population—Continued.

NEW YORK, N. Y.—continued.

Bureau of buildings—Continued.	
One stenographer	$2,820
Two steographers, each	2,640
Five stenographers, each	2,262
One stenographer	2,106
One stenographer	1,950
Three stenographers, each	1,794
Four stenographers, each	1,482
One stenographer	1,326
Typewriting copyist	1,326
Telephone switchboard operator	1,482
Telephone switchboard operator	1,326
Messenger	2,262
One architectural draftsman	4,000
Nine architectural draftsmen, each	3,528
Seven architectural draftsmen, each	3,312
Forty-four architectural draftsmen, each	2,820
Four architectural draftsmen, each	2,640
Eleven architectural draftsmen, each	2,470
Two architectural draftsmen, each	2,106
Nineteen architectural draftsmen, each	1,638
One mechanical draftsman	2,820
One mechanical draftsman	2,470
Two mechanical draftsmen, each	2,262
Nine structural steel draftsmen, each	2,820
Five structural steel draftsmen, each	2,470
Eleven junior draftsmen, each	1,794
One junior draftsman	1,482
Eighteen junior draftsmen, each	1,170
Six general inspectors, each	3,528
Three general inspectors, repairs, each	3,528
One general inspector, repairs	3,096
One inspector, iron and steel construction	3,528
One inspector, carpentry	2,820
Seven electrical inspectors, each	2,820
Two electrical inspectors, each	1,950
One inspector of electrical conductors	2,820
Two furniture inspectors, each	2,820
Four inspectors of masonry, each	2,820
Thirty-four inspectors of masonry and carpentry, each	2,820
One inspector of masonry and carpentry	2,262
One inspector of masonry and carpentry	1,950
Two inspectors of masonry and carpentry, each	942
One inspector of painting	2,820
Four inspectors of repairs, each	2,820
Two inspectors of repairs, each	2,470
Eleven sanitary inspectors, each	2,820
One sanitary inspector	2,470
One sanitary inspector	1,950
Laborer	1,794
Photographer	2,262
Expert blue printer	2,262
Autotruck driver	1,794
Bureau of supplies:	
Superintendent of supplies	9,000
Deputy superintendent of supplies	4,000
Two clerks, each	4,000
Four clerks, each	3,312

NEW YORK, N. Y.—continued.

Bureau of supplies—Continued.	
Five clerks, each	$2,820
Ten clerks, each	2,640
Two clerks, each	2,262
Four clerks, each	2,106
Three clerks, each	1,950
Nineteen clerks, each	1,794
One clerk	1,638
Two clerks, each	1,482
Twenty clerks, each	1,326
Two clerks, each	1,170
Twenty-five clerks, each	1,014
Three clerks, each	858
One clerk	702
One stenographer	2,820
One stenographer	2,640
Two stenographers, each	2,262
Three stenographers, each	2,106
Two stenographers, each	1,794
Five stenographers, each	1,326
One stenographer	1,014
Moon-Hopkins machine operator	1,170
Moon-Hopkins machine operator	1,014
Chemist	2,820
Orderly	2,262
Orderly	1,326
Toolman	1,950
One storekeeper's helper	1,794
Four storekeeper's helpers, each	1,950
Fourteen storekeeper's helpers, each	1,482
One storekeeper's helper	1,326
One laborer	1,794
Nine laborers, each	1,482
Two laborers, each	1,326
One laborer	858
Nineteen cleaners, each	1,482
Attendant	1,482
Gymnasium attendant	2,820
Four autotruck drivers, each	1,794
Automobile engineman	2,106
Licensed steam boiler fireman	2,106
Fuel engineer	4,500
One fuel inspector	2,820
Ten fuel inspectors, each	2,640
Bureau of finance:	
Auditor	7,500
Deputy auditor	6,000
Two clerks, each	4,200
One clerk	4,000
Two clerks, each	3,312
Three clerks, each	2,820
Three clerks, each	2,640
Six clerks, each	2,262
Seven clerks, each	2,106
Five clerks, each	1,794
One clerk	1,638
Five clerks, each	1,482
Forty-five clerks, each	1,326
Four clerks, each	1,170
One clerk	1,014
One clerk	858
Five clerks, each	702
Bookkeeper	4,200
Four examiners of claims, each	3,312

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Salaries in detail for cities of over 100,000 population—Continued.

NEW YORK, N. Y.—continued.

Bureau of finance—Continued.	
Stenographer	$2,820
Stenographer	1,326
One typewriting copyist	1,950
Two typewriting copyists, each	1,326
Three tabulating-machine operators, each	1,326
Typewriter accountant	1,482
Office of the secretary, board of education:	
Secretary	6,500
Assistant secretary	5,000
Chief clerk	4,000
Clerk	3,960
Clerk	3,312
Two clerks, each	2,820
Clerk	1,950
Clerk	1,482
Clerk	1,326
Two clerks, each	1,014
Clerk	858
Three stenographers, each	3,312
Stenographer	2,820
Two stenographers, each	1,794
Stenographer	1,482
Typewriting copyist	2,640
Typewriting copyist	1,794
Telephone-switchboard operator	1,170
Three telephone-switchboard operators, each	1,482
Messenger	2,262
Chauffeur	2,820
Chauffeur	1,482
Confidential secretary	3,312
Confidential secretary	2,640
Confidential secretary	2,470
Bureau of plant operation:	
Superintendent of plant operation	7,500
Chief of heating and ventilating div	5,500
Asst. chief of heating and ventilating div	4,200
Supervisor of janitors	3,600
Three assistant supervisors of janitors, each	3,528
Clerk	4,500
Two clerks, each	2,640
Clerk	1,794
Clerk	1,170
Clerk	624
Stenographer	2,106
Three stenographers, each	1,326
Assistant engineer	3,600
Assistant engineer	3,528
Mechanical engineer	3,528
Mechanical draftsman	3,528
Three mechanical draftsmen, each	2,820
Four mechanical draftsmen, each	2,640
Architectural draftsman	2,820
Architectural draftsman	2,640
Junior draftsman	2,262
Junior draftsman	2,106
Three junior draftsmen, each	1,794
Heating and ventilating inspector	3,312

NEW YORK, N. Y.—continued.

Bureau of plant operation—Continued.	
Eleven heating and ventilating inspectors, each	$2,820
Inspector of boiler-pipe covering	2,640
Bureau of lectures:	
Stenographer	2,262
Two stenographers, each	2,106
Stenographer	1,950
Stenographer	1,482
Two stenographers, each	1,326
Clerk	1,014
Clerk	702
Librarian	1,950

NORFOLK, VA.

Division superintendent	5,000
Supervisor of instruction	4,000
Primary-kindergarten supervisor	2,500
Secretary, school board	1,800
Auditor, school board	2,500
Stenographer, school board office	1,320
Superintendent of buildings	3,000
Vocational director	3,300
Assistant vocational director	1,725
Supervisor of—	
Art department	1,625
Penmanship	1,550
Music department	1,675
Special classes	1,800
Director, physical training department	2,200
Attendance officers:	
White	1,000
Colored	550

OAKLAND, CALIF.

Superintendent of schools	10,000
Two assistant superintendents of schools, each	5,500
Secretary to superintendent	2,460
Secretary-business manager	4,500
Assistant business manager	2,750
Auditor	3,300
Astronomer	3,060
Detention home instructor	2,040
Supervising storekeeper	2,700
Supervising custodian	2,400
Supervising librarian	2,508
Supervisor of—	
Reports and information	2,040
Speech defects	2,820
Two assistant supervisors of music, each	2,820
Supervisor of—	
Bands and orchestra (½)	690
Physical education	2,840
Two assistants, each	2,820
Penmanship	2,820
Kindergarten and primary education	2,820
Supervisor and director, patriotic activities	2,880
Assistant supervisor of manual training	2,820
Two assistant supervisors of drawing, each	[illegible]

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Salaries in detail for cities of over 100,000 population—Continued.

OAKLAND, CALIF.—continued.

Director of—	
Health and sanitation	$3,744
Assistant	2,760
Citizenship	3,240
Science (½)	1,980
Assistant	1,440
Boys' vocational work	3,900
Assistant (⅔)	1,572
Social studies (½)	1,620
Home economics ($480 for evening)	3,220
Assistant (½)	1,620
Agriculture (½)	1,425
Physical education (½)	975
Art	3,060
Music	3,660
Research and guidance (⅔)	4,000
Four assistants, each	2,820
Attendance ($350 included as auto expense)	3,410
Chief attendance officer ($350 for auto)	2,750
Four assistant attendance officers ($350 for auto), each	2,030
Accountant	2,400
Two assistant accountants, each	2,040
Pay-roll clerk	2,400
Bookkeeper	1,620
Warrant clerk	1,620
Six secretarial stenographers, each	1,620
Nine junior stenographers, each	1,320
Statistical clerk	1,620
Census file clerk	1,320
Duplicator operator	1,320
File clerk	1,320
Telephone operator	1,320
Three senior clerks, each	1,800
Four junior clerks, each	1,320

OMAHA, NEBR.

Superintendent of schools	10,000
Assistant superintendent	4,200
Assistant superintendent	3,500
Assistant superintendent	3,300
Secretary	4,800
Superintendent of buildings	4,800
Assistant superintendent of buildings	3,000
Supervisor of—	
Kindergartens	2,600
Drawing	2,200
Physical education	2,200
Writing	2,400
Music	2,500
Manual training	2,700
Nurses	2,700
Assistant supervisor of drawing	2,000
Assistant supervisor of physical education	1,500
Director of vocational guidance and department of child labor	2,000
Attendance officer	2,200
Assistant attendance officer	1,800
Assistant attendance officer	1,600
Supervisor of—	
Music in high schools (part time)	1,440

[b] Plus $200 bonus.

OMAHA, NEBR.—continued.

Supervisor of—Continued.	
Night schools	$2,100
Speech correction	1,600
Director of department of health supervision (part time)	2,000
School dentist	2,400
One clerk	2,100
One clerk	1,650
Two clerks, each	1,500
One clerk	1,350
One clerk	1,275
Two clerks, each	1,200
Two clerks, each	1,080
Four clerks, each	960

PATERSON, N. J.

Superintendent of schools	6,000
General supervisor	4,800
Supervisor of—	
Drawing	2,200
Assistant	1,800
Music	2,000
Cooking	2,200
Sewing	2,200
Mentally defective children	2,100
Manual training	2,900
School hygiene	5,000
Eight medical inspectors, each	500
Chief attendance officer	2,050
Three attendance officers, each	1,650
One attendance officer	[b] 1,200
Stenographer	[b] 1,700
Stenographer	[b] 1,550
Secretary, board of education	3,500
Assistant secretary	3,000
Accountant	[b] 2,100
Stenographer	[b] 1,450
Clerk	[b] 1,300
Clerk	[b] 1,150

PHILADELPHIA, PA.

Superintendent of schools	12,000
Four associate superintendents, each	5,060
Eight district superintendents, each	4,070
Director of—	
Music	5,060
Art education	4,510
Kindergartens	3,410
Practical arts and vocational education	4,510
Examinations	4,510
Compulsory education	4,510
Medical inspection	4,510
Supervisor of special education for handicapped children	3,410

	Min.	Max.
Eighteen assts. to dir. of music, each	$1,240	[c] 2,040
Ten assts. to dir. of art education, each	1,240	[c] 2,040
One asst. to dir. of kindergartens	1,240	[c] 2,040
Twenty-five assts. to dir. of physical ed., each	1,240	[c] 2,040

[c] Ten years.

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Salaries in detail for cities of over 100,000 population—Continued.

PHILADELPHIA, PA.—continued.

	Min.	Max.
Five assts. to dir. of prac. arts and voca. ed., each	$1,240	[8]$2,040
Nine attendance supervisors, each	1,240	[6] 2,040
One employment supervisor	1,240	[6] 2,040
Sixty-two attendance officers—		
Class A, each	1,200	[7] 1,500
Class B, each	1,600	[7] 2,000
Eight medical supervisors, each	1,240	[6] 2,040
Seventy-four medical inspectors, each	1,000	[7] 1,200
Head nurse	1,240	[6] 2,040
Forty school nurses, each	1,000	[6] 1,400
Librarian, pedagogical library	1,240	[6] 2,540
Assistant librarian, pedagogical library	900	[6] 1,325
Six clerical assts. to supt. and assoc. supts., Class C–D	1,375	[6] 2,000
Eight clerical assts. to supt. and assoc. supts., Class A–B	900	[6] 1,325
Eight clerical assts. to dist. supts., Class C–D	1,375	[6] 2,000
Clerical asst. to dir. of compulsory ed., Class C–D	1,375	[6] 2,000
Eight clerical assts. to dir. of compulsory ed., Class C	1,375	[7] 1,615
Twenty clerical assts. to dir. of compulsory ed., Class A–B	900	[6] 1,325
Eight clerical assts. to other directors, Class C–D	1,375	[6] 2,000
Ten clerical assts. to other directors, Class A–B	900	[6] 1,325
Secretary's office:		
Secretary		6,500
Asst. secretary and asst. solicitor		4,500
One clerk		3,000
Two clerks, each		2,600
Two clerks, each		1,800
One clerk		1,600
One clerk		1,500
Two clerks, each		1,200
Three notice servers, each		1,400
Clerical assistant		2,000
Clerical assistant		1,495
Clerical assistant		1,325
Clerical assistant		1,325
Two clerical assistants, each		1,225
Two clerical assistants, each		1,125
Office boy		480
Buildings:		
Superintendent		6,000
Assistant superintendent		4,000
Chief draftsman		4,000
Assistant draftsman		3,000
Structural engineer		3,500
Mechanical engineer		2,500
Electrical engineer		2,200
Mechanical assistant		2,000
Mechanical assistant		1,500
Detail draftsman		2,500
Two general draftsmen, each		2,000
General draftsman		1,800
Two general draftsmen, each		1,500

PHILADELPHIA, PA.—continued.

Buildings—Continued.	
Photographer	$1,500
Five inspectors, each	2,100
Clerical assistant	1,495
Clerical assistant	1,325
Clerical assistant	945
School treasurer:	
Chief clerk	1,000
Three clerks, each	1,320
Clerk	300
School controller:	
School controller	4,000
Chief accountant	1,000
Chief tax auditor	1,000
Four clerks, each	1,980
One clerk	1,485
One clerk	1,320
Eleven clerks, each	330
Receiver of taxes:	
Chief clerk	1,000
One clerk	1,430
Nine clerks, each	1,320
Eleven clerks, each	1,210
Extra services	1,000
Supplies:	
Superintendent	4,000
Assistant superintendent	2,400
Clerk	2,000
Clerk	1,900
Clerk	1,700
Two clerical assistants, each	1,495
Three clerical assistants, each	1,325
One clerical assistant	1,225
Storehouse:	
Foreman	2,000
Assistant foreman	1,800
One packer and shipper	1,400
Three packers and shippers, each	1,300
Three packers and shippers, each	1,200
Clerical assistant	1,085
Warehouse:	
Custodian	1,450
Two chauffeurs, each	1,300
Janitor	850
Outside force:	
Four inspectors, each	1,800
Piano tuner	1,300

PITTSBURGH, PA.

Superintendent of schools	12,000
Four associate superintendents, each	5,000
Executive secretary for superintendent	2,600
Stenographer for superintendent	1,440
Stenographer for superintendent	1,200
Three stenographers for assoc. supts., each	1,200
Two stenographers for assoc. supts., each	1,440
Clerk for superintendent	1,200
Director of—	
Special schools and extension work	4,000
Art	4,000
Kindergartens	4,000
Hygiene	6,000

[6] Ten years. [7] Five years. [8] Fifteen years.

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Salaries in detail for cities of over 100,000 population—Continued.

PITTSBURGH, PA.—continued.

Director of—Continued.	
Music	$4,000
Research and measurement	4,000
Primary supervision	4,000
Nature study and school gardens	4,000
Writing and commercial work	4,000
Household economy	4,000
Compulsory attendance	4,000
Vocational guidance. (Filled by high-school principal.)	
Clerks to directors:	
Secy. to director of special schools	1,440.00
Two clerks to other directors, each	1,115.62
Clerk to other directors	918.75
Two clerks to other directors, each	750.00
Clerk to other directors	1,000.00
Clerk to other directors	1,500.00
Clerk to other directors	2,500.00
Clerk to other directors	1,500.00
One supervisor of art	1,950
Two supervisors of art, each	2,300
Nine supervisors of art, each	2,400
One supervisor of kindergartens	2,300
One supervisor of hygiene	2,100
One supervisor of hygiene	2,200
Four supervisors of hygiene, each	2,400
One supervisor of hygiene	2,450
Five supervisors of hygiene, each	2,600
Payment to city of Pittsburgh, department of health, for inspectors' service and nurses	38,963
Eight dental operators, each	1,000
Eight dental clinic assistants, each	520
Medical examiner (new child-labor law)	3,000
Chief, psychological clinic	3,000
Assistant, psychological clinic	1,440
Matron and clerk, clinics	1,020
Chief, tuberculosis X-ray clinic	2,400
Laboratory assistant	900
One supervisor of music	2,100
One supervisor of music	2,200
Seven supervisors of music, each	2,400
Three supervisors of music, each	2,600
Supervisor of writing and commercial work	2,000
Supervisor of writing and commercial work	2,100
Supervisor of writing and commercial work	2,300
Six supervisors of writing and commercial work, each	2,400
Four supervisors of household economy, each	2,400
Supervisor of manual training	3,600
Supervisor of manual training	3,410
Supervisor of manual training	3,100
Vocational guidance:	
Field secretary (man)	2,600
Field secretary (man)	2,300
Field secretary (woman)	2,000
Field secretary (woman)	1,500
Two assistant placement secretaries, each	1,350
Eleven high-school counsellors for Saturday work, each	300
Twenty-six truant officers, each	1,300
Six truant-officer supervisors, each	1,420

PITTSBURGH, PA.—continued.

Secretary's office:	
Secretary	$5,000
Chief clerk and paymaster	2,970
Stenographer, board	1,440
Stenographer and cashier	1,584
Assistant secretary	2,970
Chief accountant and statistician	4,000
General accountant	1,680
Cost accountant	1,680
Accountant for disbursements	2,640
Chief voucher and pay roll clerk	1,416
Stenographer and clerk	1,140
Statistical clerk	1,224
Stenographer and clerk	1,015
Stores-distribution clerk	1,296
Machine operator for individual pay checks	1,125
Retirement system bookkeeper, shop clerk	1,296
Shop clerk	1,125
Accountant for retirement system	2,100
Controller's department:	
School controller	4,000
Auditor	3,600
Bond clerk	2,200
Auditing clerk	1,800
Retirement clerk	1,500
Legal department:	
Solicitor	5,000
Building department:	
Superintendent of buildings	6,000
Chief clerk	2,500
Stenographer and clerk (superintendent's)	1,500
Assistant superintendent	4,500
Building supervisor	3,300
Assistant to building supervisor	2,400
Engineer clerk	1,080
Draftsman	1,800
Draftsman	2,040
Engineer	2,400
Chief draftsman	3,000
Chief inspector	2,400
Chief clerk	2,000
Stenographer and clerk	1,500
Clerk	960
Supply department:	
Superintendent of supplies	6,000
Assistant superintendent	3,000
Inspector, supplies and services	1,800
Chief clerk	2,000
Clerk	1,224
Clerk	1,296
Clerk	1,296
Typist and clerk	1,125
Stenographer and file clerk	1,125
Clerk	1,224
Storekeeper	1,932
Assistant, storeroom	1,500
Two assistants, storeroom, each	1,200
Assistant, shop storeroom	1,300
Three truck drivers, each	1,352

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Salaries in detail for cities of over 100,000 population—Continued.

PORTLAND, OREG.

Superintendent	$7,000
Assistant superintendent	4,450
Assistant superintendent	4,200
Secretary	1,800
Record clerk	1,500
Stenographer	1,320
Stenographer	960
Garden supervisor	1,250
Physical training	3,900
Attendance officer	2,500
Assistant attendance officer	2,040
Assistant attendance officer	1,800
Assistant attendance officer	1,680
Attendance clerk	1,260
Business department:	
School clerk and business manager	4,750
Assistant clerk	2,100
Cashier	1,980
Secretary	1,800
Statistician	1,620
Bookkeeper	1,500
Assistant bookkeeper	1,500
Assistant bookkeeper	1,260
Bill clerk	1,080
Timekeeper	1,200
Stenographer	1,440
Stenographer	1,380
Assistant bookkeeper	1,080
Stenographer	1,200
Telephone operator	1,080
Operation department:	
Purchasing agent	1,800
Assistant purchasing agent	1,380
Two stenographers, each	1,080
Superintendent of properties	4,200
General foreman	2,700
Supervisor of operation	2,400
Supervisor of grounds	2,280
Secretary	1,380
Stenographer	1,080
Storekeeper	1,800
Assistant storekeeper	1,320
Two bookkeepers, each	1,500
Clerk	1,320
Clerk	1,350
Truck driver	1,440
Truck helper	1,200
Two watchmen, each	1,380

PROVIDENCE, R. I.

Superintendent of schools	6,000
First assistant superintendent of schools	4,500
Second assistant superintendent of schools	3,250
Third assistant superintendent of schools	2,750
Supervisor of—	
Primary schools	2,500
Special schools	2,500
Director of—	
Kindergartens	2,500
Industrial education and drawing	4,000
Five assistants, each	2,000
Music	3,500
Three assistants, each	2,000

PROVIDENCE, R. I.—continued.

Director of—Continued.	
Penmanship	$2,000
Physical education	3,500
Two assistants, each	2,000
Vocational guidance	3,150
Assistant	2,200
Instructor in military training	2,000
Secretary of school committee	4,600
Purchasing agent (books and supplies)	2,550
Truant officer	2,700
Supt., school property, including janitors	2,600
Assistant superintendent of school property	1,872
Bookkeeper (secretary school committee office)	2,100
Bookkeeper, assistant	1,400
Indexing and recording clerk	1,600
Stock clerk	2,000
Stock clerk	1,400
Stenographer (superintendent of schools)	1,800
Two stenographers, each	1,100
One stenographer	676
One clerk	1,600
Two clerks, each	1,300
Two clerks, each	1,200
One clerk	1,000

READING, PA.

City superintendent of public schools	4,700
General supervisor (administrative)	2,700
Supervisor of—	
Kindergartens and primary grades	1,700
Intermediate and grammar grades	1,700
Director of—	
Visual education	3,200
Practical arts	2,050
Physical education	2,350
Medical inspection	1,150
Medical inspection	1,150
One assistant	800
Three assistants, each (3 mos.)	240
Dentist	800
Four nurses, each	970
Music	2,000
Supervisor of—	
Drawing	1,850
Writing	1,250
Home economics	1,500
Child welfare	1,850
Special teacher in music	1,650
Special teacher in music	1,250
Special teacher in physical training	1,300
Special teacher in drawing	1,900
Special teacher	1,500
Special teacher	1,450
Special teacher	1,300
Special teacher in sewing	1,300
Special teacher in sewing	1,050
Special teacher in cooking	1,250
Two special teachers in cooking, each	1,200
Two attendance officers, each	1,425
Superintendent of buildings	2,600
Superintendent of supplies	1,[illegible]
Stenographer	

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Salaries in detail for cities of over 100,000 population—Continued.

RICHMOND, VA.	
Superintendent of schools	$6,500
Assistant superintendent	3,960
Director of—	
Night schools	1,280
Manual arts	2,420
Music	2,420
Physical education	2,420
Penmanship	2,420
Medical inspection	3,000
Supervisor of—	
Primary schools	2,200
Kindergarten (first-grade supervisor)	2,200
Drawing	1,793
Household arts	1,793
Truant officer	1,280
Clerk and supervisor of buildings	3,500
Assistant clerk	2,200
Supply clerk	1,980
Messenger	528
Two stenographers, each	1,500
One stenographer	1,440
One stenographer	1,168
One stenographer	1,080
ROCHESTER, N. Y.	
Superintendent of schools	8,000
Two assistant superintendents of schools	5,500
Director of—	
Lunch rooms	3,200
Commercial work	3,400
Junior high schools	4,500
Manual training	3,400
Art instruction	3,900
Child study department	3,100
Music	4,100
Penmanship	4,100
Physical education	4,000
Special classes	3,800
Elementary grades and kindergartens	3,300
Home economics	3,600
Employment and certification of teachers	3,500
Supervisor of—	
Art instruction	3,200
Bands and orchestras	3,000
Home economics	2,500
Physical education	2,450
Boys' clubs	2,300
High-school music	3,000
Elementary grades and kindergartens	2,050
Supervising teacher of—	
Penmanship	2,050
Penmanship	2,300
Special classes	2,100
Music	2,350
Music	2,000
Music	2,350
Music	2,300
Art instruction	2,200
Home economics	2,500
Special classes	2,150
Domestic art	2,500
Child study	2,000
Visiting teacher	2,800
Superintendent of buildings	3,500
Chief engineer	3,000
ROCHESTER, N. Y.—continued.	
Chief draftsman	$3,000
Examination board (part-time), 2 members, each	250
Two chauffeurs, each	1,300
Four attendance officers, each	1,620
Attendance officer (part-time)	408
One clerk	1,600
One clerk	1,304
One clerk	1,300
One clerk	1,260
Two clerks, each	1,200
One clerk	1,162
One clerk	998
Two clerks, each	960
Telephone operator	1,326
Secretary	1,600
Secretary	1,260
One stenographer	1,266
One stenographer	1,140
Two stenographers, each	1,020
One stenographer	960
Two messengers, each	1,200
One messenger	1,080
Two messengers, each	960
One messenger	900
Thirteen messengers, each	780
Twelve messengers, each	600
SALT LAKE CITY, UTAH.	
Superintendent	6,000
Assistant superintendent of high schools	4,350
Assistant superintendent of grade schools	3,600
Secretary	2,040
Statistician	1,320
Stenographer	1,320
Purchasing agent and clerk	4,500
Bookkeeper	2,220
Secretary	2,040
Stenographer	1,500
Assistant	780
Superintendent, buildings and grounds	4,200
Office engineer	2,700
Assistant engineer	2,640
Office clerk	1,680
Stenographer	1,200
Attendance officer	2,600
Assistant attendance officer	2,000
Assistant attendance officer	1,500
Stenographer	960
Supervisor of—	
Primary grades	3,500
Exceptional children	2,500
Art	2,800
Physical education	2,500
Art and handwork	2,000
Domestic art	2,000
Writing	2,400
Industrial arts	2,600
Home economics	2,600
Music	2,550
Assistant	1,600
Instrumental music	1,500
English	2,500
Modern languages	2,500
Part-time	3,350
Health direction	3,000

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Salaries in detail for cities of over 100,000 population—Continued.

SAN ANTONIO, TEX.

Superintendent	$6,000
Assistant superintendent	3,534
Business manager	3,600
Superintendent of buildings	1,782
Secretary to superintendent	1,506
Bookkeeper	1,770
Two stenographers, each	1,200
Physician (9 months)	900
Dentist (9 months)	900
Nurse (9 months)	1,237
Nurse (9 months)	1,089
Nurse (9 months)	990
Two attendance officers, each	1,800
Boards' attorney	600
Two supervisors, grammar and primary, each	2,214
Three supervisors, music, art and phy. ed., each	1,950

SAN FRANCISCO, CALIF.

Superintendent	4,000
Five deputy superintendents, each	3,600
Secretary	2,220
Stenographer	1,920
Messenger clerk	1,800
Chief attendance bureau	1,800

SCRANTON, PA.

Superintendent of schools	6,000
Supervisor of—	
Drawing	1,890
Drawing	1,770
Drawing	1,650
Music	2,150
Music	1,770
Sewing	1,890
Sewing	1,870
Sewing	1,550
Primary grades	2,290
Penmanship	1,990
Kindergartens	2,010
One attendance officer	1,800
Three attendance officers, each	1,500
One attendance officer	1,200
Health inspector	1,800
Secretary of school board	3,600
Superintendent of buildings and supplies	3,600
Superintendent's secretary	1,800

SEATTLE, WASH.

Superintendent	10,000
Three assistant superintendents, each	5,100
Head of dept. of method for grammar grades	3,840
Head of dept. of method for primary grades	3,300
Supervisor of—	
Drawing	3,000
Garden work	3,300
Home economics (2), each	2,760
Manual arts	3,000
Music (2), each	2,760
Music	2,400
Music	2,100
Penmanship	2,940
Physical education (4), each	2,760
Attendance	3,000

SEATTLE, WASH.—continued.

Director of—	
Vocational guidance	$4,200
Home economics	3,660
Manual training	3,660
Music	3,660
Orchestras	2,580
Physical education	3,660
Two coordinators with vocational guidance, each	2,760
Three attendance officers, each	2,200
Home visitor	1,620
Comptroller	3,900
Bookkeeper	2,100
One clerk	1,800
One clerk	1,680
One clerk	1,500
Two clerks, each	1,320
One clerk	1,200
One clerk	2,400
Two stenographers, each	1,440
Two stenographers, each	1,320
Two stenographers, each	1,140
Three stenographers, each	1,080

SPOKANE, WASH.

Superintendent of schools	5,800
Secretary of board	3,000
Assistant secretary of board	2,400
Superintendent of buildings and grounds	2,800
Accountant	2,400
Secretary to superintendent	2,400
Superintendent's assistant	2,250
Supervisor of—	
Drawing	2,550
Music	2,550
Writing and evening school	2,450
Household arts	2,250
Physical training (2), each	2,250
Manual training	2,250
Health	3,400
Attendance officer	1,800
Four stenographers, each	1,380
One stenographer	1,260
One stenographer	1,140
One stenographer	1,080

SPRINGFIELD, MASS.

Superintendent	5,800
Assistant superintendent	3,500
Secretary to superintendent	1,650
Supervisor of—	
Art and handwork	3,175
Assistant	2,200
Assistant	2,050
Assistant	1,950
Assistant	1,870
Assistant	1,630
Music	3,175
Assistant	2,250
Assistant	1,800
Nature study	2,275
Assistant	1,950
Physical education	2,975
Two assistants, each	1,800
Home economics	

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Salaries in detail for cities of over 100,000 population—Continued.

SPRINGFIELD, MASS.—continued.

Supervisor of—Continued.	
Manual arts (this in addition to regular salary as head of department in high school)	$500
Director of psychological laboratory (two-fifth time)	1,770
Visiting teacher	1,800
Director of evening-school extension (this in addition to regular salary as head of department in high school)	700
Assistant (in charge of immigrant education)	2,000
Chief clerk	2,800
Bookkeeper	1,400
Two clerks, each	1,400
Stenographer	1,200
Two clerks, each	1,200
Two clerks, each	1,000
One clerk	900
Attendance officer	2,300
Two assistant attendance officers, each	1,900
One assistant attendance officer	1,800
One assistant attendance officer	1,500

ST. LOUIS, MO.

Superintendent of instruction	8,000
Two assistant superintendents, each	5,000
Three assistant superintendents, each	6,000
One assistant superintendent (principal, Harris Teachers' College)	6,000
One assistant superintendent	4,500
Chief clerk	2,500
Teachers' clerk	2,300
One stenographer	1,500
One stenographer	1,400
One stenographer	1,300
Five stenographers, each	1,200
Messenger	600
Chief attendance officer	4,000
One assistant attendance officer	1,600
Nineteen assistant attendance officers, each	1,900
Clerk	1,400
Director of hygiene	5,000
Supervisor of hygiene	2,550
Three inspectors, each	1,900
Two inspectors, each	2,100
Nine inspectors, each	2,300
Supervisor of nurses	1,750
Two nurses, each	1,200
Four nurses, each	1,300
Two nurses, each	1,400
One nurse	1,500
Fourteen nurses, each	1,600
Two nurses, each	1,920
Director of psychoeducational clinic	4,300
Clerk	1,500
Supervisor of—	
Continuation schools	4,100
Drawing and manual arts	5,000
Educational extension	4,300
Kindergarten	4,000
Penmanship	4,000
Music	4,000
Physical training	4,000
Primary (3), each	3,400

ST. LOUIS, MO.—continued.

Supervisor of—Continued.	
School gardens	$2,950
Special schools	2,600
Assistant supervisor of—	
Drawing (3), each	1,900
Drawing (1)	2,000
Drawing (4), each	2,300
Music (3), each	1,900
Music (2), each	2,100
Music (6), each	2,300
School orchestras	3,200
Penmanship	2,200
Physical training (1)	2,000
Physical training (2), each	2,100
Physical training (1)	2,200
Physical training (4), each	2,300
Physical training (1)	2,500
School gardens	1,700
Building department:	
Superintendent of buildings	7,500
Stenographer	2,093
Stenographer	1,465
Chief clerk	3,210
Clerk, first rank	2,093
Clerk, second rank	1,672
Clerk, third rank	1,405
Messenger	808
Chief engineer	4,000
Superintendent of construction	3,210
Superintendent of heating and ventilation	2,555
Superintendent of heating repairs	2,555
Superintendent of plumbing	3,290
Superintendent of electric work	2,922
Superintendent of janitors	2,922
Superintendent of shops and repairs	3,510
Shops, head clerk	1,895
Shops, stock clerk	1,495
Shops, second clerk	1,465
Three building superintendents, each	2,010
Two draftsmen, each	2,700
Landscape gardener	2,922
Meter reader	1,750
Head garage man and chauffeur	2,249
Second garage man	1,503
Truck driver (shops)	1,591
Supply department:	
Superintendent of supplies	6,000
Assistant to superintendent of supplies	3,106
Stenographer	1,590
Cashier	1,380
Inspector of supplies	2,400
Clerk, first rank	2,100
Clerk, second rank	1,920
Clerk, third rank	1,740
Clerk, fourth rank	1,560
Clerk, fifth rank	1,380
Clerk, sixth rank	1,260
Messenger	720
Auditing department:	
Auditor	5,000
Chief clerk	3,200
Clerk, first rank	2,300
Clerk, second rank	1,950
Clerk, third rank	1,675

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Salaries in detail for cities of over 100,000 population—Continued.

ST. LOUIS, MO.—continued.

Law department:.	
Attorney	$4,500
Finance department:	
Secretary-treasurer	7,500
Assistant to secretary-treasurer	4,200
Stenographer	2,500
Stenographer	1,550
Cashier	3,500
Assistant cashier	2,200
Paymaster	2,300
Clerk, first rank	2,400
Clerk, second rank	2,200
Clerk, third rank	2,000
Clerk, fourth rank	1,500
Clerk, fifth rank	1,450
Telephone operator	1,100

ST. PAUL, MINN.

Deputy commissioner (business manager)	3,300
Superintendent of schools	5,600
Assistant superintendent of schools	2,600
Director of research	3,800
Assistant director of research	2,500
Director of attendance	3,400
Truant officer	2,040
Truant officer	1,740
Director of hygiene	3,850
Superintendent of buildings	2,500
Assistant superintendent of buildings	2,475
Inspector of fuel and heating plants	2,475
Bookkeeper	1,860
Clerk	2,040
One stenographer	2,040
Two stenographers, each	1,608
Two stenographers, each	1,548
Two stenographers, each	1,488
Supervisor of—	
Grammar grades (assistant superintendent)	3,300
Primary grades and kindergarten	2,850
Manual training and vocational training	3,500
Music	2,700
Art	2,600
Physical training	2,650
Domestic science	2,500
Special classes	2,400
Supplies	1,558
Gardens	1,850
Assistant supervisor of music	1,950
Assistant supervisor of music	1,850
Assistant supervisor in charge of kindergartens	1,850
Two assistant supervisors of art, each	1,850
Assistant to supervisors (research division)	1,520

SYRACUSE, N. Y.

Superintendent	6,000
Clerk	2,800
Assistant clerk	1,800
Secretary to superintendent	2,000
Superintendent of buildings and janitors	2,600
Two attendance officers, each	1,500
One attendance officer	1,050

SYRACUSE, N. Y.—continued.

Census clerk	$1,500
Assistant clerk	1,000
Assistant clerk	900
Custodian of supplies	1,200
Supervisor of—	
Grades	3,700
Kindergartens	2,450
Industrial education	3,600
Music	2,650
Assistant	2,150
Drawing	2,450
Assistant	1,800
Physical education	2,500

TOLEDO, OHIO.

Superintendent of schools	6,240
Assistant superintendent	4,000
Assistants in charge of special departments:	
Manual training	3,750
Extension	3,200
Vocational training	3,500
Supervisor of—	
Physical training	2,500
Art	2,500
Music	2,800
Music	2,200
Kindergarten	2,500
Grades I–II	2,500
Grades III–IV	2,200
Grades VII–VIII	2,200
Nature study	2,500
Penmanship	2,200
Home economics	2,200
Health	1,900
Attendance department:	
Chief attendance officer	1,800
Three attendance officers, each	1,600
Two attendance officers, each	1,350
One attendance officer	1,200
Clerk	1,080
Clerk	1,020
Superintendent's clerk	1,500

TRENTON, N. J.

Superintendent	7,000
Assistant superintendent	2,100
Stenographer	1,300
Two stenographers, each	1,200
Clerk	1,450
Director of primary grades	2,250
Supervisor of—	
Music	2,350
Assistant	1,850
Art	2,350
Assistant	1,850
Physical training	2,150
Domestic science	2,250
Manual training	2,900
Assistant	2,050
Medical director	4,500
Four inspectors, each	900
One inspector	900
One nurse	1,200
Three nurses, each	1,[illegible]

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Salaries in detail for cities of over 100,000 population—Continued.

TRENTON, N. J.—continued.

One nurse	$1,200
Three nurses, each	1,150
One nurse	1,100
One nurse	1,050
Dentist	1,650
Extension education director	4,500
Clerk	720
Two attendance officers, each	1,500
One attendance officer	1,300
Three attendance officers, each	1,200
Two attendance officers, each	1,100
One attendance officer	700
Supervisor of working papers	1,220
School psychologist	2,300
Continuation-school director	800
Business manager	3,500
Clerk	1,800
Secretary board of education	3,000
Assistant secretary, board of education	2,000

WASHINGTON, D. C.

Superintendent	6,000
Two assistant superintendents, each	3,750
Director, intermediate instruction	2,900
Director, primary instruction	2,900
Thirteen district principals, each	2,900
Secretary	[9] 2,000
Financial clerk	[9] 2,000
One clerk	[9] 1,600
Two clerks, each	[9] 1,500
One clerk	[9] 1,400
Three clerks, each	[9] 1,000
One clerk	[9] 900
Two stenographers, each	[9] 1,000
Two messengers, each	[9] 720
Supervisor of—	
Domestic art	[9] 2,000
Domestic science	[9] 2,500
Drawing	[9] 2,500
Penmanship	[9] 2,400
Physical training	[9] 2,500
Manual training	[10] 2,900
Music	2,500

WILMINGTON, DEL.

Superintendent	6,000
Assistant superintendent	3,000
Director of vocational education	4,500
Clerk, office of vocational education	1,200
Clerk, office of Americanization department	1,200
Supervisor of—	
Americanization classes	3,000
Sewing	2,000
Music	2,000
Art	2,000
Nature study	1,800
Physical education	1,500
Chief attendance officer	1,500
Two assistant attendance officers, each	1,150
Medical inspector	1,500

[9] Plus $240 bonus.

WILMINGTON, DEL.—continued.

Three nurses, each	$1,200
Clerk, superintendent's office	1,200
Secretary, board of education	2,500
Clerk, office board of education	1,400
Clerk, office board of education	1,000
Supervisor of buildings	2,500
Chief engineer	2,500

WORCESTER, MASS.

Superintendent of schools	6,000
Two assistant superintendents, each	4,600
One assistant superintendent	4,250
Director of—	
Drawing	3,250
Home economics	2,000
Kindergarten	1,800
Manual training	3,250
Music	3,250
Physical training	3,250
Writing	2,000
Agriculture	3,250
Two supervisors of Americanization and evening practical arts, each	1,700
Business manager and clerk of school committee	4,600
Chief attendance officer	2,100
Supervisor of attendance	2,100
Chief clerk, superintendent's office	2,000
First assistant clerk, superintendent's office	1,400
Chief clerk, business manager's office	2,200
First assistant clerk, business manager's office	1,387
Stenographer	1,200
Stenographer	1,150
Stenographer	900
Stenographer	825
Clerk, attendance officers	918
Inspector of schoolhouses and supervisor of janitors	2,125
Director of school hygiene	2,500

YOUNGSTOWN, OHIO.

Superintendent	9,000
Assistant superintendent	4,500
Director of schools	5,000
Clerk-treasurer	2,760
Assistant clerk	2,220
Secretary	1,320
Secretary	1,260
Secretary, substitute (per month)	70
Supervisor of—	
Drawing	2,850
Music	2,375
Kindergarten and primary	3,000
Penmanship	2,375
Domestic science and arts	2,250
Manual training	2,975
Physical education and hygiene	3,300
Assistant supervisor of—	
Physical training	2,850
Music	2,000
Four attendance officers, each	1,600

[10] Plus $120 bonus.

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DEPARTMENT OF THE INTERIOR
U. S. BUREAU OF EDUCATION

BULLETIN, 1921, No. 31

MONTHLY RECORD OF CURRENT EDUCATIONAL PUBLICATIONS

INDEX

FEBRUARY, 1920—JANUARY, 1921

WASHINGTON
GOVERNMENT PRINTING OFFICE
1921

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MONTHLY RECORD OF CURRENT EDUCATIONAL PUBLICATIONS: INDEX, FEBRUARY, 1920—JANUARY, 1921.

INTRODUCTORY NOTE.

The present bulletin constitutes a complete author and subject index to the 2,380 entries contained in the 10 numbers of the Monthly Record of Current Educational Publications issued from February, 1920, to January, 1921, inclusive. The record was published each month during this period, with the exception of July and August. The references in the index are to the item numbers which run consecutively through the 10 issues of the record for the year.

This bulletin is designed to serve institutions and persons desiring to preserve a permanent bibliography of educational literature for 1920, which may be formed by binding the 10 numbers of the Monthly Record for the year with the index here presented.

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DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

BULLETIN, 1921, No. 32

THE REORGANIZATION OF MATHEMATICS IN SECONDARY EDUCATION

A SUMMARY OF THE REPORT BY THE NATIONAL COMMITTEE ON MATHEMATICAL REQUIREMENTS

WASHINGTON
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THE NATIONAL COMMITTEE ON MATHEMATICAL REQUIREMENTS.

(Under the auspices of The Mathematical Association of America.)

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J. A. Foberg, vice chairman, State Department of Public Instruction, Harrisburg, Pa.

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Representing the Association of Teachers of Mathematics in the Middle States and Maryland.
J. A. Foberg, director of mathematical instruction, State Department, Harrisburg, Pa.[3]
Representing the Central Association of Science and Mathematics Teachers.
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Raleigh Schorling, The Lincoln School, New York City.
P. H. Underwood, Ball High School, Galveston, Tex.
Eula A. Weeks, Cleveland High School, St. Louis, Mo.

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[1] Prof. Moore took the place vacated in 1918 by the resignation of Oswald Veblen, Princeton University.
[2] Mr. Downey took the place vacated in 1919 by the resignation of G. W. Evans, Charlestown High School, Boston, Mass.
[3] Until July, 1921, of the Crane Technical High School, Chicago, Ill.

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INTRODUCTION.

The National Committee on Mathematical Requirements was organized in the late summer of 1916 under the auspices of the Mathematical Association of America for the purpose of giving national expression to the movement for reform in the teaching of mathematics, which had gained considerable headway in various parts of the country, but which lacked the power that coordination and united effort alone could give.

The original nucleus of the committee, appointed by Prof. E. R. Hedrick, then president of the association, consisted of the following: A. R. Crathorne, University of Illinois; E. H. Moore, University of Chicago; D. E. Smith, Columbia University; H. W. Tyler, Massachusetts Institute of Technology; Oswald Veblen, Princeton University; and J. W. Young, Dartmouth College, chairman. This committee was instructed to add to its membership so as to secure adequate representation of secondary school interests, and then to undertake a comprehensive study of the whole problem concerned with the improvement of mathematical education and to cover the field of secondary and collegiate mathematics.

This group held its first meeting in September, 1916, at Cambridge, Mass. At that meeting it was decided to ask each of the three large associations of secondary school teachers of mathematics (The Association of Teachers of Mathematics in New England, The Association of Teachers of Mathematics in the Middle States and Maryland, and the Central Association of Science and Mathematics Teachers) to appoint an official representative on the committee. At this time also a general plan for the work of the committee was outlined and agreed upon.

In response to the request above referred to the following were appointed by the respective associations: Miss Vevia Blair, Horace Mann School, New York, N. Y., representing the Middle States and Maryland association; G. W. Evans, Charlestown High School, Boston, Mass., representing the New England association;[1] and J. A. Foberg, Crane Technical High School, Chicago, Ill., representing the central association.

At later dates the following members were appointed: A. C. Olney, commissioner of secondary education, Sacramento, Calif.; Raleigh Schorling, The Lincoln School, New York City; P. H. Underwood, Ball High School, Galveston, Tex.; and Miss Eula A. Weeks, Cleveland High School, St. Louis, Mo.

From the very beginning of its deliberations the committee felt that the work assigned to it could not be done effectively without adequate financial support. The wide geographical distribution of its membership made a full attendance at meetings of the committee difficult if not impossible without financial resources sufficient to defray the traveling expenses of members, the expenses of clerical assistance, etc. Above all, it was felt that, in order to give to the ultimate recommendations of the committee the authority and effectiveness which they should have, it was necessary to arouse the interest and secure the active cooperation of teachers, administrators, and organizations throughout the country—that the work of the committee should represent a cooperative effort on a truly national scale.

For over two years, owing in large part to the World War, attempts to secure adequate financial support proved unsuccessful. Inevitably also the war interfered with the committee's work. Several members were engaged in war work [2] and the others were carrying extra burdens on account of such work carried on by their colleagues.

[1] Mr. Evans resigned in the summer of 1919, owing to an extended trip abroad; his place was taken by W. F. Downey, English High School, Boston, Mass.

[2] Prof. Veblen resigned in 1917 on account of the pressure of his war duties. His place was taken on the committee by Prof. C. N. Moore, University of Cincinnati.

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In the spring of 1919, however, and again in 1920, the committee was fortunate in securing generous appropriations from the General Education Board of New York City for the prosecution of its work.[2]

This made it possible greatly to extend the committee's activities. The work was planned on a large scale for the purpose of organizing a truly nation-wide discussion of the problems facing the committee, and J. W. Young and J. A. Foberg were selected to devote their whole time to the work of the committee. Suitable office space was secured and adequate stenographic and clerical help was employed.

The results of the committee's work and deliberations are presented in the following report. A word as to the methods employed may, however, be of interest at this point. The committee attempted to establish working contact with all organizations of teachers and others interested in its problems and to secure their active assistance. Nearly 100 such organizations have taken part in this work. A list of these organizations will be found in the complete report of the committee. Provisional reports on various phases of the problem were submitted to these cooperating organizations in advance of publication, and criticisms, comments, and suggestions for improvement were invited from individuals and special cooperating committees. The reports previously published for the committee by the United States Bureau of Education [3] and in The Mathematics Teacher [4] and designated as "preliminary" are the result of this kind of cooperation. The value of such assistance can hardly be overestimated and the committee desires to express to all individuals, organizations, and educational journals that have taken part its hearty appreciation and thanks. The committee believes it is safe to say, in view of the methods used in formulating them, that the recommendations of this final report have the approval of the great majority of progressive teachers throughout the country.

No attempt has been made in this report to trace the origin and history of the various proposals and movements for reform nor to give credit either to individuals or organizations for initiating them. A convenient starting point for the history of the modern movement in this country may be found in E. H. Moore's presidential address before the American Mathematical Society in 1902.[5] But the movement here is only one manifestation of a movement that is world-wide and in which very many individuals and organizations have played a prominent part. The student interested in this phase of the subject is referred to the extensive publications of the International Commission on the Teaching of Mathematics, to the Bibliography of the Teaching of Mathematics, 1900–1912, by D. E. Smith and C. Goldziher (U. S. Bur. of Educ., Bull., 1912, No. 29) and to the bibliography (since 1912) to be found in the complete report of the national committee (Ch. XVI).

The national committee expects to maintain its office, with a certain amount of clerical help, during the year 1921–22 and perhaps for a longer period. It is hoped that in this way it may continue to serve as a clearing house for all activities looking to the improvement of the teaching of mathematics in this country, and to assist in bringing about the effective adoption in practice of the recommendations made in the following report, with such modifications of them as continued study and experimentation may show to be desirable.

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[2] Again in Nov., 1921, the General Education Board made appropriations to cover the expense of publishing and distributing the complete report of the committee and to enable the committee to carry on certain phases of its work during the year 1922.

[3] The Reorganization of the First Courses in Secondary School Mathematics, U. S. Bureau of Education, Secondary School Circular, No. 5, February, 1920. 11 pp. Junior High School Mathematics, U. S. Bureau of Education, Secondary School Circular, No. 6, July, 1920. 10 pp. The Function Concept in Secondary School Mathematics, Secondary School Circular No. 8, June, 1921. 10 pp.

[4] Terms and Symbols in Elementary Mathematics, The Mathematics Teacher, 14: 107–118, March, 1921. Elective Courses in Mathematics for Secondary Schools, The Mathematics Teacher, 14: 161–170, April, 1921 College Entrance Requirements in Mathematics, The Mathematics Teacher, 14: 224–245, May, 1921.

[5] E. H. Moore: On the Foundations of Mathematics, Bulletin of the American Mathematical Society, vol. 9 (1902–3), p. 402; Science, 17: 401.

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THE REORGANIZATION OF MATHEMATICS IN SECONDARY EDUCATION.

Chapter I.

A BRIEF OUTLINE OF THE REPORT.

The present chapter gives a brief general outline of the contents of this pamphlet for the purpose of orienting the reader and making it possible for him to gain quickly an understanding of its scope and the problems which it considers.

The valid aims and purposes of instruction in mathematics are considered in Chapter II. A formulation of such aims and a statement of general principles governing the committee's work is necessary as a basis for the later specific recommendations. Here will be found the reasons for including mathematics in the course of study for all secondary school pupils.

To the end that all pupils in the period of secondary education shall gain early a broad view of the whole field of elementary mathematics, and, in particular, in order to insure contact with this important element in secondary education on the part of the very large number of pupils who, for one reason or another, drop out of school by the end of the ninth year, the national committee recommends emphatically that the course of study in mathematics during the seventh, eighth, and ninth years contain the fundamental notions of arithmetic, of algebra, of intuitive geometry, of numerical trigonometry and at least an introduction to demonstrative geometry, and that this body of material be required of all secondary school pupils. A detailed account of this material is given in Chapter III. Careful study of the later years of our elementary schools, and comparison with European schools, have shown the vital need of reorganization of mathematical instruction, especially in the seventh and eighth years. The very strong tendency now evident to consider elementary education as ceasing at the end of the sixth school year, and to consider the years from the seventh to the twelfth inclusive as comprising years of secondary education, gives impetus to the movement for reform of the teaching of mathematics at this stage. The necessity for devising courses of study for the new junior high school, comprising the years seven, eight, and nine, enables us to

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present a body of materials of instruction, and to propose organizations of this material that will be valid not only for junior high schools conducted as separate schools, but also for years seven and eight in the traditional eight-year elementary school and the first year of the four-year high school.

While Chapter III is devoted to a consideration of the body of material of instruction in mathematics that is regarded as of sufficient importance to form part of the course of study for all secondary school pupils, Chapter IV is devoted to consideration of the types of material that properly enter into courses of study for pupils who continue their study of mathematics beyond the minimum regarded as essential for all pupils. Here will be found recommendations concerning the traditional subject matter of the tenth, eleventh, and twelfth school years, and also certain material that heretofore has been looked upon in this country as belonging rather to college courses of study; as, for instance, the elementary ideas and processes of the calculus.

Chapter V is devoted to a study of the types of secondary school instruction in mathematics that may be looked upon as furnishing the best preparation for successful work in college. This study leads to the conclusion that there is no conflict between the needs of those pupils who ultimately go to college and those who do not. Certain very definite recommendations are made as to changes that appear desirable in the statement of college-entrance requirements and in the type of college-entrance examination.

Chapter VI contains lists of propositions and constructions in plane and in solid geometry. The propositions are classified in such a way as to separate from others of less importance those which are regarded as so fundamental that they should form the common minimum of any standard course in the subject. This chapter has close connection with the two chapters which immediately precede it.

The statement previously made in our preliminary reports and repeated in Chapter II, that the function concept should serve as a unifying element running throughout the instruction in mathematics of the secondary school, has brought many requests for a more precise definition of the rôle of the function concept in secondary school mathematics. Chapter VII is intended to meet this demand.

Recommendations as to the adoption and use of terms and symbols in elementary mathematics are contained in Chapter VIII. It is intended to present a norm embodying agreement as to best current practice. It will tend to restrict the irresponsible introduction of new terms and symbols, but it does not close the door entirely on innovations that may from time to time prove serviceable and desirable.

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The chapters of the complete report thus far referred to appear in full in this summary. The remaining chapters of the complete report give for the most part the results of special investigations prepared for the national committee. The contents of these chapters are indicated sufficiently at the end of the present summary to enable the reader to decide whether or not he is interested in the studies mentioned, and whether or not he desires the complete report.

Copies of the complete report of the national committee, which will probably be ready for distribution in the spring of 1922, may be had, free of charge, upon application addressed to the chairman, Prof. J. W. Young, Hanover, N. H.

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Chapter II.

AIMS OF MATHEMATICAL INSTRUCTION—GENERAL PRINCIPLES.

I. INTRODUCTION.

A discussion of mathematical education, and of ways and means of enhancing its value, must be approached first of all on the basis of a precise and comprehensive formulation of the valid aims and purposes of such education.[1] Only on such a basis can we approach intelligently the problems relating to the selection and organization of material, the methods of teaching and the point of view which should govern the instruction, and the qualifications and training of the teachers who impart it. Such aims and purposes of the teaching of mathematics, moreover, must be sought in the nature of the subject, the rôle it plays in the practical, intellectual, and spiritual life of the world, and in the interests and capacities of the students.

Before proceeding with the formulation of these aims, however, we may properly limit to some extent the field of our enquiry. We are concerned primarily with the period of secondary education—comprising, in the modern junior and senior high schools, the period beginning with the seventh and ending with the twelfth school year, and concerning itself with pupils ranging in age normally from 12 to 18 years. References to the mathematics of the grades below the seventh (mainly arithmetic) and beyond the senior high school will be only incidental.

Furthermore, we are primarily concerned at this point with what may be described as "general" aims, that is to say aims which are valid for large sections of the school population and which may properly be thought of as contributing to a general education as distinguished from the specific needs of vocational, technical, or professional education.

II. THE AIMS OF MATHEMATICAL INSTRUCTION.

With these limitations in mind we may now approach the problem of formulating the more important aims that the teaching of mathematics should serve. It has been customary to distinguish three

[1] Reference may here be made to the formulation of the principal aims in education to be found in the Cardinal Principles of Secondary Education, published by the U. S. Bureau of Education as Bulletin No. 55, 1918. The main objectives of education are there stated to be: 1. Health; 2. Command of fundamental processes; 3. Worthy home membership; 4. Vocation; 5. Citizenship; 6. Worthy use of leisure; 7. Ethical character. These objectives are held to apply to all education—elementary, secondary, and higher—and all subjects of instruction are to contribute to their achievement.

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classes of aims: (1) Practical or utilitarian, (2) disciplinary, (3) cultural; and such a classification is indeed a convenient one. It should be kept clearly in mind, however, that the three classes mentioned are not mutually exclusive and that convenience of discussion rather than logical necessity often assigns a given aim to one or the other of the classes. Indeed any truly disciplinary aim is practical, and in a broad sense the same is true of cultural aims.

Practical aims.—By a practical or utilitarian aim, in the narrower sense, we mean then the immediate or direct usefulness in life of a fact, method or process in mathematics.

1. The immediate and undisputed utility of the fundamental processes of arithmetic in the life of every individual demands our first attention. The first instruction in these processes, it is true, falls outside the period of instruction which we are considering. By the end of the sixth grade the child should be able to carry out the four fundamental operations with integers and with common and decimal fractions accurately and with a fair degree of speed. This goal can be reached in all schools—as it is being reached in many—if the work is done under properly qualified teachers and if drill is confined to the simpler cases which alone are of importance in the practical life of the great majority. (See more specifically, Ch. III, pp. 7, 18.) Accuracy and facility in numerical computation are of such vital importance, however, to every individual that effective drill in this subject should be continued throughout the secondary school period, not in general as a separate topic, but in connection with the numerical problems arising in other work. In this numerical work, besides accuracy and speed, the following aims are of the greatest importance:

(*a*) A progressive increase in the pupil's understanding of the nature of the fundamental operations and power to apply them in new situations. The fundamental laws of algebra are a potent influence in this direction. (See 3, below.)

(*b*) Exercise of common sense and judgment in computing from approximate data, familiarity with the effect of small errors in measurements, the determination of the number of figures to be used in computing and to be retained in the result, and the like.

(*c*) The development of self-reliance in the handling of numerical problems, through the consistent use of checks on all numerical work.

2. Of almost equal importance to every educated person is an understanding of the language of algebra and the ability to use this language intelligently and readily in the expression of such simple quantitative relations as occur in every-day life and in the normal reading of the educated person.

Appreciation of the significance of formulas and ability to work out simple problems by setting up and solving the necessary equati

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must nowadays be included among the minimum requirements of any program of universal education.

3. The development of the ability to understand and to use such elementary algebraic methods involves a study of the fundamental laws of algebra and at least a certain minimum of drill in algebraic technique, which, when properly taught, will furnish the foundation for an understanding of the significance of the processes of arithmetic already referred to. The essence of algebra as distinguished from arithmetic lies in the fact that algebra concerns itself with the operations upon numbers *in general*, while arithmetic confines itself to operations on *particular* numbers.

4. The ability to understand and interpret correctly graphical representations of various kinds, such as nowadays abound in popular discussions of current scientific, social, industrial, and political problems will also be recognized as one of the necessary aims in the education of every individual. This applies to the representation of statistical data, which is becoming increasingly important in the consideration of our daily problems, as well as to the representation and understanding of various sorts of dependence of one variable quantity upon another.

5. Finally, among the practical aims to be served by the study of mathematics should be listed familiarity with the geometric forms common in nature, industry, and life; the elementary properties and relations of these forms, including their mensuration; the development of space-perception; and the exercise of spatial imagination. This involves acquaintance with such fundamental ideas as congruence and similarity and with such fundamental facts as those concerning the sum of the angles of a triangle, the pythagorean proposition and the areas and volumes of the common geometric forms.

Among directly practical aims should also be included the acquisition of the ideas and concepts in terms of which the quantitative thinking of the world is done, and of ability to think clearly in terms of those concepts. It seems more convenient, however, to discuss this aim in connection with the disciplinary aims.

Disciplinary aims.—We would include here those aims which relate to mental training, as distinguished from the acquisition of certain specific skills discussed in the preceding section. Such training involves the development of certain more or less general characteristics and the formation of certain mental habits which, besides being directly applicable in the setting in which they are developed or formed, are expected to operate also in more or less closely related fields—that is, to "transfer" to other situations.

The subject of the transfer of training has for a number of years been a very controversial one. Only recently has there been any

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evidence of agreement among the body of educational psychologists. We need not at this point go into detail as to the present status of disciplinary values since this forms the subject of a separate chapter in the complete report (Chap. IX; see also Chap. X). It is sufficient for our present purpose to call attention to the fact that most psychologists have abandoned two extreme positions as to transfer of training. The first asserted that a pupil trained to reason well in geometry would thereby be trained to reason equally well in any other subject; the second denied the possibility of any transfer, and hence the possibility of any general mental training. That the effects of training do transfer from one field of learning to another is now, however, recognized. The amount of transfer in any given case depends upon a number of conditions. If these conditions are favorable, there may be considerable transfer, but in any case the amount of transfer is difficult to measure. Training in connection with certain attitudes, ideals, and ideas is almost universally admitted by psychologists to have general value. It may, therefore, be said that, with proper restrictions, general mental discipline is a valid aim in education.

The aims which we are discussing are so important in the restricted domain of quantitative and spatial (i. e., mathematical or partly mathematical) thinking which every educated individual is called upon to perform that we do not need for the sake of our argument to raise the question as to the extent of transfer to less mathematical situations.

In formulating the disciplinary aims of the study of mathematics the following should be mentioned:

(1) The acquisition, in precise form, of those ideas or concepts in terms of which the quantitative thinking of the world is done. Among these ideas and concepts may be mentioned ratio and measurement (lengths, areas, volumes, weights, velocities, and rates in general, etc), proportionality and similarity, positive and negative numbers, and the dependence of one quantity upon another.

(2) The development of ability to think clearly in terms of such ideas and concepts. This ability involves training in—

(*a*) Analysis of a complex situation into simpler parts. This includes the recognition of essential factors and the rejection of the irrelevant.

(*b*) The recognition of logical relations between interdependent factors and the understanding and, if possible, the expression of such relations in precise form.

(*c*) Generalization; that is, the discovery, and formulation of a general law and an understanding of its properties and applications.

(3) The acquisition of mental habits and attitudes which will make the above training effective in the life of the individual. Among

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such habitual reactions are the following: A seeking for relations and their precise expression; an attitude of enquiry; a desire to understand, to get to the bottom of a situation; concentration and persistence; a love for precision, accuracy, thoroughness, and clearness, and a distaste for vagueness and incompleteness; a desire for orderly and logical organization as an aid to understanding and memory.

(4) Many, if not all, of these disciplinary aims are included in the broad sense of the idea of relationship or dependence—in what the mathematician in his technical vocabulary refers to as a "function" of one or more variables. Training in "functional thinking," that is thinking in terms of relationships, is one of the most fundamental disciplinary aims of the teaching of mathematics.

Cultural aims.—By cultural aims we mean those somewhat less tangible but none the less real and important intellectual, ethical, esthetic or spiritual aims that are involved in the development of appreciation and insight and the formation of ideals of perfection. As will be at once apparent the realization of some of these aims must await the later stages of instruction, but some of them may and should operate at the very beginning.

More specifically we may mention the development or acquisition of—

(1) Appreciation of beauty in the geometrical forms of nature, art, and industry.

(2) Ideals of perfection as to logical structure; precision of statement and of thought; logical reasoning (as exemplified in the geometric demonstration); discrimination between the true and the false, etc.

(3) Appreciation of the power of mathematics—of what Byron expressively called "the power of thought, the magic of the mind"[2]—and the rôle that mathematics and abstract thinking, in general, has played in the development of civilization; in particular in science, in industry, and in philosophy. In this connection mention should be made of the religious effect, in the broad sense, which the study of the permanence of laws in mathematics and of the infinite tends to establish.[3]

III. THE POINT OF VIEW GOVERNING INSTRUCTION.

The practical aims enumerated above, in spite of their vital importance, may without danger be given a secondary position in seeking to formulate the general point of view which should govern the

[2] D. E. Smith: Mathematics in the Training for Citizenship, Teachers College Record, vol. 18, May, 1917, p. 6.

[3] For an elaboration of the ideas here presented in the barest outline, the reader is referred to the article by D. E. Smith already mentioned and to his presidential address before the Mathematical Association of America, Wellesley, Mass., Sept. 7, 1921.

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teacher, provided only that they receive due recognition in the selection of material and that the necessary minimum of technical drill is insisted upon.

The primary purposes of the teaching of mathematics should be to develop those powers of understanding and of analyzing relations of quantity and of space which are necessary to an insight into and control over our environment and to an appreciation of the progress of civilization in its various aspects, and to develop those habits of thought and of action which will make these powers effective in the life of the individual.

All topics, processes, and drill in technique which do not directly contribute to the development of the powers mentioned should be eliminated from the curriculum. It is recognized that in the earlier periods of instruction the strictly logical organization of subject matter [4] is of less importance than the acquisition, on the part of the pupil, of experience as to facts and methods of attack on significant problems, of the power to see relations, and of training in accurate thinking in terms of such relations. Care must be taken, however, through the dominance of the course by certain general ideas that it does not become a collection of isolated and unrelated details.

Continued emphasis throughout the course must be placed on the development of ability to grasp and to utilize ideas, processes, and principles in the solution of concrete problems rather than on the acquisition of mere facility or skill in manipulation. The excessive emphasis now commonly placed on manipulation is one of the main obstacles to intelligent progress. On the side of algebra, the ability to understand its language and to use it intelligently, the ability to analyze a problem, to formulate it mathematically, and to interpret the result must be dominant aims. *Drill in algebraic manipulation should be limited to those processes and to the degree of complexity required for a thorough understanding of principles and for probable applications either in common life or in subsequent courses which a substantial proportion of the pupils will take.* It must be conceived throughout as a means to an end, not as an end in itself. Within these limits, skill in algebraic manipulation is important, and drill in this subject should be extended far enough to enable students to carry out the essential processes accurately and expeditiously.

On the side of geometry the formal demonstrative work should be preceded by a reasonable amount of informal work of an intuitive, experimental, and constructive character. Such work is of great value in itself; it is needed also to provide the necessary familiarity with geometric ideas, forms, and relations, on the basis of which

[4] "The logical from the standpoint of subject matter represents the goal, the last term of training, not the point of departure." Dewey, "How We Think," p. 62.

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alone intelligent appreciation of formal demonstrative work is possible.

The one great idea which is best adapted to unify the course is that of the *functional relation*. The concept of a variable and of the dependence of one variable upon another is of fundamental importance to everyone. It is true that the general and abstract form of these concepts can become significant to the pupil only as a result of very considerable mathematical experience and training. There is nothing in either concept, however, which prevents the presentation of specific concrete examples and illustrations of dependence even in the early parts of the course. Means to this end will be found in connection with the tabulation of data and the study of the formula and of the graph and of their uses.

The primary and underlying principle of the course should be the idea of relationship between variables, including the methods of determining and expressing such relationship. The teacher should have this idea constantly in mind, and the pupil's advancement should be consciously directed along the lines which will present first one and then another of the ideas upon which finally the formation of the general concept of functionality depends. (For a more detailed discussion of these ideas see Chap. VII below.)

The general ideas which appear more explicitly in the course and under the dominance of one or another of which all topics should be brought are: (1) The formula, (2) graphic representation, (3) the equation, (4) measurement and computation, (5) congruence and similarity, (6) demonstration. These are considered in more detail in a later section of the report (Chaps. III and IV).

IV. THE ORGANIZATION OF SUBJECT MATTER.

"General" courses.—We have already called attention to the fact that, in the earlier periods of instruction especially, logical principles of organization are of less importance than psychological and pedagogical principles. In recent years there has developed among many progressive teachers a very significant movement away from the older rigid division into "subjects" such as arithmetic, algebra, and geometry, each of which shall be "completed" before another is begun, and toward a rational breaking down of the barriers separating these subjects, in the interest of an organization of subject matter that will offer a psychologically and pedagogically more effective approach to the study of mathematics.

There has thus developed the movement toward what are variously called "composite," "correlated," "unified," or "general" courses. The advocates of this new method of organization base their claims on the obvious and important interrelations between arithmetic, algebra, and geometry (mainly intuitive), which the student must grasp

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before he can gain any real insight into mathematical methods and which are inevitably obscured by a strict adherence to the conception of separate "subjects." The movement has gained considerable new impetus by the growth of the junior high-school idea, and there can be little question that the results already achieved by those who are experimenting with the new methods of organization warrant the abandonment of the extreme "water-tight compartment" methods of presentation.

The newer method of organization enables the pupil to gain a broad view of the whole field of elementary methematics early in his high-school course. In view of the very large number of pupils who drop out of school at the end of the eighth or the ninth school year or who for other reasons then cease their study of mathematics, this fact offers a weighty advantage over the older type of organization under which the pupil studied algebra alone during the ninth school year, to the complete exclusion of all contact with geometry.

It should be noted, however, that the specific recommendations as to content given in the next two chapters do not necessarily imply the adoption of a different type of organization of the materials of instruction. A large number of high schools will for some time continue to find it desirable to organize their courses of study in mathematics by subjects—algebra, plane geometry, etc. Such schools are urged to adopt the recommendations made with reference to the content of the separate subjects. These, in the main, constitute an essential simplification as compared with present practice. The economy of time that will result in courses in ninth-year algebra, for instance, will permit of the introduction of the newer type of material, including intuitive geometry and numerical trigonometry, and thus the way will be prepared for the gradual adoption in larger measure of the recommendations of this report.

At the present time it is not possible to designate any particular order of topics or any organization of the materials of instruction as being the best or as calculated most effectively to realize the aims and purposes here set forth. More extensive and careful experimental work must be done by teachers and administrators before any such designation can be made that shall avoid undesirable extremes and that shall bear the stamp of general approval. This experimental work will prove successful in proportion to the skill and insight exercised in adapting the aims and purposes of instruction to the interests and capacities of the pupils. One of the greatest weaknesses of the traditional courses is the fact that both the interests and the capacities of pupils have received insufficient consideration and study. For a detailed account of courses in mathematics at a num-

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ber of the most successful experimental schools, the reader is referred to Chapter XII of the complete report.

Required courses.—The national committee believes that the material described in the next chapter should be required of all pupils, and that under favorable conditions this minimum of work can be completed by the end of the ninth school year. In the junior high school, comprising grades seven, eight, and nine, the course for these three years should be planned as a unit *with the purpose of giving each pupil the most valuable mathematical training he is capable of receiving in those years, with little reference to courses which he may or may not take in succeeding years.* In particular, college-entrance requirements should, during these years, receive no specific consideration. Fortunately there appears to be no conflict of interest during this period between those pupils who ultimately go to college and those who do not; a course planned in accordance with the principle just enunciated will form a desirable foundation for college preparation. (See Ch. V.)

Similarly, in case of the at present more prevalent 8–4 school organization, the mathematical material of the seventh and eighth grades should be selected and organized as a unit with the same purpose; the same applies to the work of the first year (ninth grade) of the standard four-year high school, and to later years in which mathematics may be a required subject.

In the case of some elective courses the principle needs to be modified so as to meet whatever specific vocational or technical purposes the courses may have. (See Ch. IV.)

The movement toward correlation of the work in mathematics with other courses in the curriculum, notably those in science, is as yet in its infancy. The results of such efforts will be watched with the keenest interest.

The junior high-school movement.—Reference has several times been made to the junior high school. The national committee adopted the following resolution on April 24, 1920:

> The national committee approves the junior high school form of organization, and urges its general adoption in the conviction that it will secure greater efficiency in the teaching of mathematics.

The committee on the reorganization of secondary education, appointed by the National Education Association, in its pamphlet on the "Cardinal Principles of Secondary School Education," issued in 1918 by the Bureau of Education, advocates an organization of the school system whereby the first six years shall be devoted to elementary education, and the following six years to secondary education to be divided into two periods which may be designated as junior and senior periods.

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To those interested in the study of the questions relating to the history and present status of the junior high-school movement, the following books are recommended: Principles of Secondary Education, by Inglis, Houghton Mifflin & Co., 1918; The Junior High School, The Fifteenth Yearbook (Pt. III) of the National Society for the Study of Education, Public School Publishing Co., 1919; The Junior High School, by Bennett, Warwick & York, 1919; The Junior High School, by Briggs, Houghton Mifflin & Co., 1920; and The Junior High School, by Koos, Harcourt, Brace & Howe, 1920.

V. THE TRAINING OF TEACHERS.

While the greater part of this report concerns itself with the content of courses in mathematics, their organization and the point of view which should govern the instruction, and investigations relating thereto, the national committee must emphasize strongly its conviction that even more fundamental is the problem of the teacher—his qualifications and training, his personality, skill, and enthusiasm.

The greater part of the failure of mathematics is due to poor teaching. Good teachers have in the past succeeded, and continue to succeed, in achieving highly satisfactory results with the traditional material; poor teachers will not succeed even with the newer and better material.

The United States is far behind Europe in the scientific and professional training required of its secondary school teachers (see Ch. XIV of the complete report). The equivalent of two or three years of graduate and professional training in addition to a general college course is the normal requirement for secondary school teachers in most European countries. Moreover, the recognized position of the teacher in the community must be such as to attract men and women of the highest ability into the profession. This means not only higher salaries but smaller classes and more leisure for continued study and professional advancement. It will doubtless require a considerable time before the public can be educated to realize the wisdom of taxing itself sufficiently to bring about the desired result. But if this ideal is continually advanced and supported by sound argument there is every reason to hope that in time the goal may be reached.

In the meantime everything possible should be done to improve the present situation. One of the most vicious and widespread practices consists in assigning a class in mathematics to a teacher who has had no special training in the subject and whose interests lie elsewhere, because in the construction of the time schedule he or she happens to have a vacant period at the time. This is done on the principle, apparently, that "anybody can teach mathematics" by simply

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following a textbook and devoting 90 per cent of the time to drill in algebraic manipulation or to reciting the memorized demonstration of a theorem in geometry.

It will be apparent from the study of this report that a successful teacher of mathematics must not only be highly trained in his subject and have a genuine enthusiam for it but must have also peculiar attributes of personality and above all insight of a high order into the psychology of the learning process as related to the higher mental activities. Administrators should never lose sight of the fact that while mathematics if properly taught is one of the most important, interesting, and valuable subjects of the curriculum, it is also one of the most difficult to teach successfully.

Standards for teachers.—It is necessary at the outset to make a fundamental distinction between standards in the sense of requirements for appointment to teaching positions, and standards of scientific attainment which shall determine the curricula of colleges and normal schools aiming to give candidates the best practicable preparation. The former requirements should be high enough to insure competent teaching, but they must not be so high as to form a serious obstacle to admission to the profession even for candidates who have chosen it relatively late. The main factors determining the level of these requirements are the available facilities for preparation, the needs of the pupils, and the economic or salary conditions.

Relatively few young people deliberately choose before entering college the teaching of secondary mathematics as a life work. In the more frequent or more typical case the college student who will ultimately become a teacher of secondary mathematics makes the choice gradually, perhaps unconsciously, late in the college course or even after its completion, perhaps after some trial of teaching in other fields. The possible supply of young people who have the real desire to become teachers of mathematics is so meager in comparison with the almost unlimited needs of the country that every effort should be made to develop and maintain that desire and all possible encouragement given those who manifest it. If, as will usually be the case, the desire is associated with the necessary mathematical capacity, it will not be wise to hamper the candidate by requiring too high attainments, though as a matter of course he will need guidance in continuing his preparation for a profession of exceptional difficulty and exceptional opportunity.

Another factor which must tend to restrict requirements of high mathematical attainment is the importance to the candidate of breadth of preparation. In college he may be in doubt as to becoming a teacher of mathematics or physics or some other subject. It is unwise to hasten the choice. In many cases the secondary teacher

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must be prepared in more than one field, and to the future teacher of mathematics preparation in physics and drawing, not to mention chemistry, engineering, etc., may be at least as valuable as purely mathematical college electives beyond the calculus.

In the second sense—of standards of scientific attainment to be held by the colleges and normal schools—these institutions should make every effort—

1. To awaken interest in the subject and the teaching of it in as many young people of the right sort as possible.
2. To give them the best possible opportunity for professional preparation and improvement, both before and after the beginning of teaching.

How the matter of requirements for appointment will actually work out in a given community will inevitably depend upon conditions of time and place, varying widely in character and degree. In many communities it is already practicable and customary to require not less than two years of college work in mathematics, including elementary calculus, with provision for additional electives. Such a requirement the committee would strongly recommend, recognizing, however, that in some localities it would be for the present too restrictive of the supply. In some cases preparation in the pedagogy, philosophy, and history of mathematics could be reasonably demanded or at least given weight; in other cases, any considerable time spent upon them would be of doubtful value. In all cases requirements should be carefully adjusted to local conditions with a view to recognizing the value both of broad and thorough training on the part of those entering the profession and of continued preparation by summer work and the like. Particular pains should be taken that such preparation is made accessible and attractive in the colleges and normal schools from which teachers are drawn.

It is naturally important that entrance to the profession should not be much delayed by needlessly high or extended requirements, and the danger of creating a teacher who may be too much a specialist for school work and too little for college training must be guarded against. There may naturally also be a wide difference between requirements in a strong school offering many electives and a weaker one or a junior high school. Practically, it may be fair to expect that the stronger schools will maintain their standards not by arbitrary or general requirements for entrance to the profession but often by recruiting from other schools teachers who have both high attainments and successful teaching experience.

Programs of courses for colleges and normal schools preparing teachers in secondary mathematics will be found in Chapter XIV of the complete report, together with an account of existing conditions.

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Chapter III.

MATHEMATICS FOR YEARS SEVEN, EIGHT AND NINE.

I. INTRODUCTION.

There is a well-marked tendency among school administrators to consider grades one to six, inclusive, as constituting the elementary school and to consider the secondary school period as commencing with the seventh grade and extending through the twelfth.[1] Conforming to this view, the contents of the courses of study in mathematics for grades seven, eight, and nine are considered together. In the succeeding chapter the content for grades 10, 11, and 12 is considered.

The committee is fully aware of the widespread desire on the part of teachers throughout the country for a detailed syllabus by years or half years which shall give the best order of topics with specific time allotments for each. This desire can not be met at the present time for the simple reason that no one knows what is the best order of topics nor how much time should be devoted to each in an ideal course. The committee feels that its recommendations should be so formulated as to give every encouragement to further experimentation rather than to restrict the teacher's freedom by a standardized syllabus.

However, certain suggestions as to desirable arrangements of the material are offered in a later section (Sec. III) of this chapter, and in Chapter XII (Mathematics in Experimental Schools) of the complete report there will be found detailed outlines giving the order of presentation and time allotments in actual operation in schools of various types. This material should be helpful to teachers and administrators in planning courses to fit their individual needs and conditions.

It is the opinion of the committee that the material included in this chapter should be required of all pupils. It includes mathematical knowledge and training which is likely to be needed by every citizen. Differentiation due to special needs should be made after and not before the completion of such a general minimum foundation. Such portions of the recommended content as have

[1] See Cardinal Principles of Secondary Education, p. 18.

"We therefore recommend a reorganization of the school system whereby the first six years shall be devoted to elementary education designed to meet the needs of pupils of approximately 6 to 12 years of age; and the second 6 years to secondary education designed to meet the needs of approximately 12 to 18 years of age. * * * The 6 years to be devoted to secondary education may well be divided into two periods which may be designated as the junior and senior periods."

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not been completed by the end of the ninth year should be required in the following year.

The general principles which have governed the selection of the material presented in the next section and which should govern the point of view of the teaching have already been stated (Ch. II). At this point it seems desirable to recall specifically what was then said concerning principles governing the organization of material, the importance to be attached to the development of insight and understanding and of ability to think clearly in terms of relationships (dependence) and the limitations imposed on drill in algebraic manipulation. In addition we would call attention to the following:

It is assumed that at the end of the sixth school year the pupil will be able to perform with accuracy and with a fair degree of speed the fundamental operations with integers and with common and decimal fractions. The fractions here referred to are such simple ones in common use as are set forth in detail under A (*c*) in the following section. It may be pointed out that the standard of attainment here implied is met in a large number of schools, as is shown by various tests now in use (see Ch. XIII of the complete report), and can easily be met generally if time is not wasted on the relatively unimportant parts of the subject.

In adapting instruction in mathematics to the mental traits of pupils care should be taken to maintain the mental growth too often stunted by secondary school materials and methods, and an effort should be made to associate with inquisitiveness, the desire to experiment, the wish to know "how and why," and the like, the satisfaction of these needs.

In the years under consideration it is also especially important to give the pupils as broad an outlook over the various fields of mathematics as is consistent with sound scholarship. These years especially are the ones in which the pupil should have the opportunity to find himself, to test his abilities and aptitudes, and to secure information and experience which will help him choose wisely his later courses and ultimately his life work.

II. MATERIAL FOR GRADES SEVEN, EIGHT, AND NINE.

In the material outlined in the following pages no attempt is made to indicate the most desirable order of presentation. Stated by topics rather than years the mathematics of grades seven, eight, and nine may properly be expected to include the following:

A. Arithmetic:

(*a*) The fundamental operations of arithmetic.

(*b*) Tables of weights and measures in general practical use, including the common metric units (meter, centimeter, millimeter, kilometer, gram, kilogram, liter). The meaning of such foreign monetary units as pound, franc, and [redacted]

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(*c*) Such simple fractions as $\frac{1}{2}$, $\frac{1}{3}$, $\frac{2}{3}$, $\frac{1}{4}$, $\frac{3}{4}$, $\frac{1}{5}$, $\frac{1}{8}$; others than these to have less attention.
(*d*) Facility and accuracy in the four fundamental operations; time tests, taking care to avoid subordinating the teaching to the tests, or to use the tests as measures of the teacher's efficiency. (See Ch. XIII.)
(*e*) Such simple short cuts in multiplication and division as that of replacing multiplication by 25 by multiplying by 100 and dividing by 4.
(*f*) Percentage. Interchanging common fractions and per cents; finding any per cent of a number; finding what per cent one number is of another; finding a number when a certain per cent of it is known; and such applications of percentage as come within the student's experience.
(*g*) Line, bar, and circle graphs wherever they can be used to advantage.
(*h*) Arithmetic of the home: Household accounts, thrift, simple bookkeeping, methods of sending money, parcel post.
Arithmetic of the community: Property and personal insurance, taxes.
Arithmetic of banking: Savings accounts, checking accounts.
Arithmetic of investment: Real estate, elementary notions of stocks and bonds, postal savings.
(*i*) Statistics: Fundamental concepts, statistical tables and graphs; pictograms; graphs showing simple frequency distributions.

It will be seen that the material listed above includes some material of earlier instruction. This does not mean that this material is to be made the direct object of study but that drill in it shall be given in connection with the new work. It is felt that this shift in emphasis will make the arithmetic processes here involved much more effective and will also result in a great saving of time.

The amount of time devoted to arithmetic as a distinct subject should be greatly reduced from what is at present customary. This does not mean a lessening of emphasis on drill in arithmetic processes for the purpose of securing accuracy and speed. The need for continued arithmetic work and numerical computation throughout the secondary school period is recognized elsewhere in this report. (Ch. II.)

The applications of arithmetic to business should be continued late enough in the course to bring to their study the pupil's greatest maturity, experience, and mathematical knowledge, and to insure real significance of this study in the business and industrial life which many of the pupils will enter upon at the close of the eighth or ninth school year. (See I below.) In this connection care should be taken that the business practices taught in the schools are in accord with the best actual usage. Arithmetic should not be completed before the pupil has acquired the power of using algebra as an aid.

B. Intuitive geometry:

(*a*) The direct measurement of distances and angles by means of a linear scale and protractor. The approximate character of measurement. An understanding of what is meant by the degree of precision as expressed by the number of "significant" figures.

(*b*) Areas of the square, rectangle, parallelogram, triangle, and trapezoid; circumference and area of a circle; surfaces and volumes of solids of corresponding importance; the construction of the corresponding formulas.

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(*c*) Practice in numerical computation with due regard to the number of figures used or retained.

(*d*) Indirect measurement by means of drawings to scale. Uses of square ruled paper.

(*e*) Geometry of appreciation. Geometric forms in nature, architecture, manufacture, and industry.

(*f*) Simple geometric constructions with ruler and compasses, T-square, and triangle, such as that of the perpendicular bisector, the bisector of an angle, and parallel lines.

(*g*) Familiarity with such forms as the equilateral triangle, the 30°–60° right triangle, and the isosceles right triangle; symmetry; a knowledge of such facts as those concerning the sum of the angles of a triangle and the Pythagorean relation; simple cases of geometric loci in the plane and in space.

(*h*) Informal introduction to the idea of similarity.

The work in intuitive geometry should make the pupil familiar with the elementary ideas concerning geometric forms in the plane and in space with respect to shape, size, and position. Much opportunity should be provided for exercising space perception and imagination. The simpler geometric ideas and relations in the plane may properly be extended to three dimensions. The work should, moreover, be carefully planned so as so bring out geometric relations and logical connections. Before the end of this intuitive work the pupil should have definitely begun to make inferences and to draw valid conclusions from the relations discovered. In other words, this informal work in geometry should be so organized as to make it a gradual approach to, and provide a foundation for, the subsequent work in demonstrative geometry.

C. Algebra:

1. The formula—its construction, meaning, and use (*a*) as a concise language; (*b*) as a shorthand rule for computation; (*c*) as a general solution; (*d*) as an expression of the dependence of one variable upon another.

The pupil will already have met the formula in connection with intuitive geometry. The work should now include translation from English into algebraic language, and vice versa, and special care should be taken to make sure that the new language is understood and used intelligently. The nature of the dependence of one variable in a formula upon another should be examined and analyzed, with a view to seeing "how the formula works." (See Ch. VII.)

2. Graphs and graphic representations in general—their construction and interpretation in (*a*) representing facts (statistical, etc.); (*b*) representing dependence; (*c*) solving problems.

After the necessary technique has been adequately presented graphic representation should not be considered as a separate topic

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but should be used throughout, whenever helpful, as an illustrative and interpretative instrument.

3. Positive and negative members—their meaning and use (*a*) as expressing both magnitude and one of two opposite directions or senses; (*b*) their graphic representation; (*c*) the fundamental operations applied to them.

4. The equation—its use in solving problems:

(*a*) Linear equations in one unknown—their solution and applications.

(*b*) Simple cases of quadratic equations when arising in connection with formulas and problems.

(*c*) Equations in two unknowns, with numerous concrete illustrations.

(*d*) Various simple applications of ratio and proportion in cases in which they are generally used in problems of similarity and in other problems of ordinary life. In view of the usefulness of the ideas and training involved, this subject may also properly include simple cases of variation.

5. Algebraic technique: (*a*) The fundamental operations.

Their connection with the rules of arithmetic should be clearly brought out and made to illuminate numerical processes. Drill in these operations should be limited strictly in accordance with the principle mentioned in Chapter II, page 9. In particular, "nests" of parentheses should be avoided, and multiplication and division should not involve much beyond monomial and binomial multipliers, divisors, and quotients.

(*b*) Factoring: The only cases that need be considered are (i) common factors of the terms of a polynomial; (ii) the difference of two squares; (iii) trinomials of the second degree that can be easily factored by trial.

(*c*) Fractions.

Here again the intimate connection with the corresponding processes of arithmetic should be made clear and should serve to illuminate such processes. The four fundamental operations with fractions should be considered only in connection with simple cases and should be applied constantly throughout the course so as to gain the necessary accuracy and facility.

(*d*) Exponents and radicals. The work done on exponents and radicals should be confined to the simplest material required for the treatment of formulas. The laws for positive integral exponents should be included. The consideration of radicals should be confined to transformations of the following types: $\sqrt{a^2b} = a\sqrt{b}$, $\sqrt{a/b} = \frac{1}{b}\sqrt{ab}$ and $\sqrt{a/b} = \sqrt{a}/\sqrt{b}$, and to the numerical evaluation of simple expressions involving the radical sign. A process for finding the square

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root of a number should be included, but not for finding the square root of a polynomial.

(*e*) Stress should be laid upon the need for checking solutions.

D. Numerical trigonometry:

(*a*) Definition of sine, cosine, and tangent.

(*b*) Their elementary properties as functions.

(*c*) Their use in solving problems involving right triangles.

(*d*) The use of tables of these functions (to three or four places).

The introduction of the elementary notions of trigonometry into the earlier courses in mathematics has not been as general in the United States as in foreign countries. (See Ch. XI of the complete report.) Among the reasons for early introduction of this topic are these: Its practical usefulness for many citizens; the insight it gives into the nature of mathematical methods, particularly those concerned with indirect measurement, and into the rôle that mathematics plays in the life of the world; the fact that it is not difficult and that it offers wide opportunity for concrete and significant application, and the interest it arouses in the pupils. It should be based upon the work in intuitive geometry, with which it has intimate contacts (see *B*, *d*, *h*), and should be confined to the simplest material needed for the numerical treatment of the problems indicated. Relations between the trigonometric functions need not be considered.

E. Demonstrative geometry.—The demonstration of a limited number of propositions, with no attempt to limit the number of fundamental assumptions, the principal purpose being to show to the pupil what "demonstration" means.

Many of the geometric facts previously inferred intuitively may be used as the basis upon which the demonstrative work is built. This is not intended to preclude the possibility of giving at a later time rigorous proofs of some of the facts inferred intuitionally. It should be noted that from the strictly logical point of view the attempt to reduce to a minimum the list of axioms, postulates or assumptions is not at all necessary, and from a pedagogical point of view such an attempt in an elementary course is very undesirable. It is necessary, however, that those propositions which are to be used as the basis of subsequent formal proofs be explicitly listed and their logical significance recognized.

In regard to demonstrative geometry some teachers have objected to the introduction of such work below the tenth grade on the ground that with such immature pupils as are found in the ninth grade nothing worth while could be accomplished in the limited time available. These teachers may be right with regard to conditions prevailing or likely to prevail in the majority of schools in the immediate future. The committee has therefore in a later section of this

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chapter (Sec. III) made alternative provision for the omission of work in demonstrative geometry.

On the other hand, it is proper to call attention to the fact that certain teachers have successfully introduced a limited amount of work in demonstrative geometry into the ninth grade (see Ch. XII of the complete report), and that it would seem desirable that others should make the experiment when conditions are favorable. Much of the opposition is probably due to a failure to realize the extent to which the work in intuitive geometry, if properly organized, will prepare the way for the more formal treatment, and to a misconception of the purposes and extent of the work in demonstrative geometry that is proposed. In reaching a decision on this question teachers should keep in mind that it is one of their important duties and obligations, in the grades under consideration, to show their pupils the nature, content, and possibilities of later courses in their subject and to give to each pupil an opportunity to determine his aptitudes and preferences therefor. The omission in the earlier courses of all work of a demonstrative nature in geometry would disregard one educationally important aspect of mathematics.

F. History and biography.—Teachers are advised to make themselves reasonably acquainted with the leading events in the history of mathematics, and thus to know that mathematics has developed in answer to human needs, intellectual as well as technical. They should use this material incidentally throughout their courses for the purpose of adding to the interest of the pupils by means of informal talks on the growth of mathematics and on the lives of the great makers of the science.

G. Optional topics.—Certain schools have been able to cover satisfactorily the work suggested in sections A–F before the end of the ninth grade. (See Ch. XII, on Experimental Schools.) The committee looks with favor on the efforts, in such schools, to introduce earlier than is now customary certain topics and processes which are closely related to modern needs, such as the meaning and use of fractional and negative exponents, the use of the slide rule, the use of logarithms and of other simple tables, and simple work in arithmetic and geometric progressions, with modern appplications to such financial topics as interest and annuities and to such scientific topics as falling bodies and laws of growth.

H. Topics to be omitted or postponed.—In addition to the large amount of drill in algebraic technique already referred to, the following topics should, in accordance with our basic principles, be excluded from the work of grades seven, eight, and nine; some of them will properly be included in later courses (see Ch. IV):

Highest common factor and lowest common multiple, except the simplest cases involved in the addition of simple fractions.

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The theorems on proportion relating to alternation, inversion, composition, and division.
Literal equations, except such as appear in common formulas, including the derivation of formulas and of geometric relations, or to show how needless computation may be avoided.
Radicals, except as indicated in a previous section.
Square root of polynomials.
Cube root.
Theory of exponents.
Simultaneous equations in more than two unknowns.
The binomial theorem.
Imaginary and complex numbers.
Radical equations except such as arise in dealing with elementary formulas.

I. Problems.—As already indicated, much of the emphasis now generally placed on the formal exercise should be shifted to the "concrete" or "verbal" problem. The selection of problem material is, therefore, of the highest importance.

The demand for "practical" problems should be fully met in so far as the maturity and previous experience of the pupil will permit. But above all, the problems must be "real" *to the pupil*, must connect with his ordinary thought, and must be within the world of his experience and interest.

The educational utility of problems is not to be measured by their commercial or scientific value, but by their degree of reality for the pupils. They must exemplify those leading ideas which it is desired to impart, and they must do so through media which are real to those under instruction. The reality is found in the students, the utility in their acquisition of principles.[2]

There should be, moreover, a conscious effort through the selection of problems to correlate the work in mathematics with the other courses of the curriculum, especially in connection with courses in science. The introduction of courses in "general science" increases the opportunities in this direction.

J. Numerical computation, use of tables, etc.—The solution of problems should offer opportunity throughout the grades under consideration for considerable arithmetical and computational work. In this connection attention should be called to the importance of exercising common sense and judgment in the use of approximate data, keeping in mind the fact that all data secured from measurement are approximate. A pupil should be led to see the absurdity of giving the area of a circle to a thousandth of a square inch when the radius has been measured only to the nearest inch. He should understand the conception of "the number of significant figures" and should not retain more figures in his result than are warranted by the accuracy of his data. The ideals of accuracy and of self-reliance and the necessity of checking all numerical results should be emphasized. An insight into the nature of tables, including some elementary notions as to interpolation, is highly desirable. The use of tables of various

[2] Carson: Mathematical Education, pp. 42–45.

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kinds (such as squares and square roots, interest and trigonometric functions) to facilitate computation and to develop the idea of dependence should be encouraged.

III. SUGGESTED ARRANGEMENTS OF MATERIAL.

In approaching the problem of arranging or organizing this material it is necessary to consider the different situations that may have to be met.

1. The junior high school.—In view of the fact that under this form of school organization pupils may be expected to remain in school until the end of the junior high-school period instead of leaving in large numbers at the end of the eighth school year, the mathematics of the three years of the junior high school should be planned as a unit, and should include the material recommended in the preceding section. There remains the question as to the order in which the various topics should be presented and the amount of time to be devoted to each. The committee has already stated its reasons for not attempting to answer this question (see Sec. I). The following plans for the distribution of time are, however, suggested in the hope that they may be helpful, but no one of them is recommended as superior to the others, and only the large divisions of material are mentioned.

PLAN A.

First year: Applications of arithmetic, particularly in such lines as relate to the home, to thrift, and to the various school subjects; intuitive geometry.
Second year: Algebra; applied arithmetic, particularly in such lines as relate to the commercial, industrial and social needs.
Third year: Algebra, trigonometry, demonstrative geometry.
By this plan the demonstrative geometry is introduced in the third year, and arithmetic is practically completed in the second year.

PLAN B.

First year: Applied arithmetic (as in plan A); intuitive geometry.
Second year: Algebra, intuitive geometry, trigonometry.
Third year: Applied arithmetic, algebra, trigonometry, demonstrative geometry.
By this plan trigonometry is taken up in two years, and the arithmetic is transferred from the second year to the third year.

PLAN C.

First year: Applied arithmetic (as in plan A), intuitive geometry, algebra.
Second year: Algebra, intuitive geometry.
Third year: Trigonometry, demonstrative geometry, applied arithmetic.
By this plan algebra is confined chiefly to the first two years.

PLAN D.

First year: Applied arithmetic (as in plan A), intuitive geometry.
Second year: Intuitive geometry, algebra.
Third year: Algebra, trigonometry, applied arithmetic.
By this plan demonstrative geometry is omitted entirely.

PLAN E.

First year: Intuitive geometry, simple formulas, elementary principles of statistics, arithmetic (as in plan A).
Second year: Intuitive geometry, algebra, arithmetic.
Third year: Geometry, numerical trigonometry, arithmetic.

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2. Schools organized on the 8–4 plan.—It can not be too strongly emphasized that, in the case of the older and at present more prevalent plan of the 8–4 school organization, the work in mathematics of the seventh, eighth, and ninth grades should also be organized to include the material here suggested.

The prevailing practice of devoting the seventh and eighth grades almost exclusively to the study of arithmetic is generally recognized as a wasteful marking of time. It is mainly in these years that American children fall behind their European brothers and sisters. No essentially new arithmetical principles are taught in these years, and the attempt to apply the previously learned principles to new situations in the more advanced business and economic aspects of arithmetic is doomed to failure on account of the fact that the situations in question are not and can not be made real and significant to pupils of this age. We need only refer to what has already been said in this chapter on the subject of problems.

The same principles should govern the selection and arrangement of material in mathematics for the seventh and eighth grades of a grade school as govern the selection for the corresponding grades of a junior high school, with this exception: Under the 8–4 form of organization many pupils will leave school at the end of the eighth year. This fact must receive due consideration. The work of the seventh and eighth years should be so planned as to give the pupils in these grades the most valuable mathematical information and training that they are capable of receiving in those years, with little reference to courses that they may take in later years. As to possibilities for arrangement, reference may be made to the plans given above for the first two years of the junior high school. When the work in mathematics of the seventh and eighth grades has been thus reorganized, the work of the first year of a standard four-year high school should complete the program suggested.

Finally, there must be considered the situation in those four-year high schools in which the pupils have not had the benefit of the reorganized instruction recommended for grades seven and eight. It may be hoped that this situation will be only temporary, although it must be recognized, that owing to a variety of possible reasons (lack of adequately prepared teachers in grades seven and eight, lack of suitable text books, administrative inertia, and the like), the new plans will not be immediately adopted and that therefore, for some years, many high schools will have to face the situation implied.

In planning the work of the ninth grade under these conditions teachers and administrative officers should again be guided by the principle of giving the pupils the most valuable mathematical information and training which they are capable of receiving in this year with little reference to future courses which the pupil may or may

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included in college entrance requirements will be excluded. The results of an investigation made by the national committee in connection with a study of these requirements indicates that modifications to meet these changes will be desirable from the standpoint of both college and secondary school (see Ch. V).

3. During the years now under consideration an increasing amount of attention should be paid to the logical organization of the material, with the purpose of developing habits of logical memory, appreciation of logical structure, and ability to organize material effectively.

It can not be too strongly emphasized that the broadening of content of high-school courses in mathematics suggested in the present and in previous chapters will materially increase the usefulness of these courses to those who pursue them. It is of prime importance that educational administrators and others charged with the advising of students should take careful account of this fact in estimating the relative importance of mathematical courses and their alternatives. The number of important applications of mathematics in the activities of the world is to-day very large and is increasing at a very rapid rate. This aspect of the progress of civilization has been noted by all observers who have combined a knowledge of mathematics with an alert interest in the newer developments in other fields. It was revealed in very illuminating fashion during the recent war by the insistent demand for persons with varying degrees of mathematical training for many war activities of the first moment. If the same effort were made in time of peace to secure the highest level of efficiency available for the specific tasks of modern life, the demand for those trained in mathematics would be no less insistent; for it is in no wise true that the applications of mathematics in modern warfare are relatively more important or more numerous than its applications in those fields of human endeavor which are of a constructive nature.

There is another important point to be kept in mind in considering the relative value to the average student of mathematical and various alternative courses. If the student who omits the mathematical courses has need of them later, it is almost invariably more difficult, and it is frequently impossible, for him to obtain the training in which he is deficient. In the case of a considerable number of alternative subjects a proper amount of reading in spare hours at a more mature age will ordinarily furnish him the approximate equivalent to that which he would have obtained in the way of information in a high-school course in the same subject. It is not, however, possible to make up deficiencies in mathematical training in so simple a fashion. It requires systematic work under a competent teacher to master properly the technique of the subject, and any break in the continuity of the work is a handicap for which increased maturity rarely compensates. Moreover, when the indi-

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Chapter IV.

MATHEMATICS FOR YEARS TEN, ELEVEN, AND TWELVE.

I. INTRODUCTION.

The committee has in the preceding chapter expressed its judgment that the material there recommended for the seventh, eighth, and ninth years should be required of all pupils. In the tenth, eleventh, and twelfth years, however, the extent to which elections of subjects is permitted will depend on so many factors of a general character that it seems unnecessary and inexpedient for the present committee to urge a positive requirement beyond the minimum one already referred to. The subject must, like others, stand or fall on its intrinsic merit or on the estimate of such merit by the authorities responsible at a given time and place. The committee believes nevertheless that every standard high school should not merely offer courses in mathematics for the tenth, eleventh, and twelfth years, but should encourage a large proportion of its pupils to take them. Apart from the intrinsic interest and great educational value of the study of mathematics, it will in general be necessary for those preparing to enter college or to engage in the numerous occupations involving the use of mathematics to extend their work beyond the minimum requirement.

The present chapter is intended to suggest for students in general courses the most valuable mathematical training that will appropriately follow the courses outlined in the previous chapter. Under present conditions most of this work will normally fall in the last three years of the high school; that is, in general, in the tenth, eleventh, and twelfth years.

The selection of material is based on the general principles formulated in Chapter II. At this point attention need be directed only to the following:

1. In the years under consideration it is proper that some attention be paid to the students' vocational or other later educational needs.

2. The material for these years should include as far as possible those mathematical ideas and processes that have the most important applications in the modern world. As a result, certain material will naturally be included that at present is not ordinarily given in secondary-school courses; as, for instance, the material concerning the calculus. On the other hand, certain other material that is now

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printed later in this report (Ch. VI). In this connection it may be suggested that more attention than is now customary may profitably be given to those methods of treatment which make consistent use of the idea of motion (already referred to), continuity (the tangent as the limit of a secant, etc.), symmetry, and the dependence of one geometric magnitude upon another.

If the student has had a satisfactory course in intuitive geometry and some work in demonstration before the tenth grade, he may find it possible to cover a minimum course in demonstrative geometry, giving the great basal theorems and constructions, together with exercises, in the 90 periods constituting a half year's work.

2. *Algebra.*—(*a*) Simple functions of one variable: Numerous illustrations and problems involving linear, quadratic, and other simple functions including formulas from science and common life. More difficult problems in variation than those included in the earlier course.

(*b*) Equations in one unknown: Various methods for solving a quadratic equation (such as factoring, completing the square, use of formula) should be given. In connection with the treatment of the quadratic a very brief discussion of complex numbers should be included. Simple cases of the graphic solution of equations of degree higher than the second should be discussed and applied.

(*c*) Equations in two or three unknowns: The algebraic solution of linear equation in two or three unknowns and the graphic solution of linear equations in two unknowns should be given. The graphic and algebraic solution of a linear and a quadratic equation and of two quadratics that contain no first degree term and no xy term should be included.

(*d*) Exponents, radicals and logarithms: The definitions of negative, zero and fractional exponents should be given, and it should be made clear that these definitions must be adopted if we wish such exponents to conform to the laws for positive integral exponents. Reduction of radical expressions to those involving fractional exponents should be given as well as the inverse transformation. The rules for performing the fundamental operations on expressions involving radicals, and such transformations as

$$\sqrt[n]{a/b} = \frac{1}{b}\sqrt[n]{ab^{n-1}}, \quad \sqrt[n]{a^n b} = a\sqrt[n]{b}, \quad \frac{a}{\sqrt{b}+\sqrt{c}} = \frac{a(\sqrt{b}-\sqrt{c})}{b-c}$$

should be included. In close connection with the work on exponents and radicals there should be given as much of the theory of logarithms as is involved in their application to computation and sufficient practice in their use in computation to impart a fair degree of facility.

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(*e*) Arithmetic and geometric progressions: The formulas for the *n*th term and the sum of *n* terms should be derived and applied to significant problems.

(*f*) Binomial theorem: A proof for positive integral exponents should be given; it may also be stated that the formula applies to the case of negative and fractional exponents under suitable restrictions, and the problems may include the use of the formula in these cases as well as in the case of positive integral exponents.

3. *Solid geometry.*—The aim of the work in solid geometry should be to exercise further the spatial imagination of the student and to give him both a knowledge of the fundamental spatial relationships and the power to work with them. It is felt that the work in plane geometry gives enough training in logical demonstration to warrant a shifting of emphasis in the work on solid geometry away from this aspect of the subject and in the direction of developing greater facility in visualizing spatial relations and figures, in representing such figures on paper, and in solving problems in mensuration.

For many of the practical applications of mathematics it is of fundamental importance to have accurate space perceptions. Hence it would seem wise to have at least some of the work in solid geometry come as early as possible in the mathematical courses, preferably not later than the beginning of the eleventh school year. Some schools will find it possible and desirable to introduce the more elementary notions of solid geometry in connection with related ideas of plane geometry.

The work in solid geometry should include numerous exercises in computation based on the formulas established. This will serve to correlate the work with arithmetic and algebra and to furnish practice in computation.

The following provisional outline of subject matter is submitted:

a. Propositions relating to lines and planes, and to dihedral and trihedral angles.

b. Mensuration of the prism, pyramid, and frustum; the (right circular) cylinder, cone and frustum, based on an informal treatment of limits; the sphere, and the spherical triangle.

c. Spherical geometry.

d. Similar solids.

Such theorems as are necessary as a basis for the topics here outlined should be studied in immediate connection with them.

Desirable simplification and generalization may be introduced into the treatment of mensuration theorems by employing such theorems as Cavalieri's and Simpson's, and the Prismoid Formula; but rigorous proofs or derivations of these need not be included.

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Beyond the range of the mensuration topics indicated above, it seems preferable to employ the methods of the elementary calculus. (See section 6, below).

It should be possible to complete a minimum course covering the topics outlined above in not more than one-third of a year.

The list of propositions in solid geometry given in Chapter VI should be considered in connection with the general principles stated at the beginning of this section. By requiring formal proofs to a more limited extent than has been customary, time will be gained to attain the aims indicated and to extend the range of geometrical information of the pupil. Care must be exercised to make sure that the pupil is thoroughly familiar with the facts, with the associated terminology, with all the necessary formulas, and that he secures the necessary practice in working with and applying the information acquired to concrete problems.

4. *Trigonometry.*—The work in elementary trigonometry begun in the earlier years should be completed by including the logarithmic solution of right and oblique triangles, radian measure, graphs of trigonometric functions, the derivation of the fundamental relations between the functions and their use in proving identities and in solving easy trigonometric equations. The use of the transit in connection with the simpler operations of surveying and of the sextant for some of the simpler astronomical observations, such as those involved in finding local time, is of value; but when no transit or sextant is available, simple apparatus for measuring angles roughly may and should be improvised. Drawings to scale should form an essential part of the numerical work in trigonometry. The use of the slide rule in computations requiring only three-place accuracy and in checking other computations is also recommended.

5. *Elementary statistics.*—Continuation of the earlier work to include the meaning and use of fundamental concepts and simple frequency distributions with graphic representations of various kinds and measures of central tendency (average, mode, and median).

6. *Elementary calculus.*—The work should include:

(*a*) The general notion of a derivative as a limit indispensable for the accurate expression of such fundamental quantities as velocity of a moving body or slope of a curve.

(*b*) Applications of derivatives to easy problems in rates and in maxima and minima.

(*c*) Simple cases of inverse problems; e. g., finding distance from velocity, etc.

(*d*) Approximate methods of summation leading up to integration as a powerful method of summation.

(*e*) Applications to simple cases of motion, area, volume, and pressure.

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Work in the calculus should be largely graphic and may be closely related to that in physics; the necessary technique should be reduced to a minimum by basing it wholly or mainly on algebraic polynomials. No formal study of analytic geometry need be presupposed beyond the plotting of simple graphs.

It is important to bear in mind that, while the elementary calculus is sufficiently easy, interesting, and valuable to justify its introduction, special pains should be taken to guard against any lack of thoroughness in the fundamentals of algebra and geometry. No possible gain could compensate for a real sacrifice of such thoroughness.

It should also be borne in mind that the suggestion of including elementary calculus is not intended for all schools nor for all teachers or all pupils in any school. It is not intended to connect in any direct way with college entrance requirements. The future college student will have ample opportunity for calculus later. The capable boy or girl who is not to have the college work ought not on that account to be prevented from learning something of the use of this powerful tool. The applications of elementary calculus to simple concrete problems are far more abundant and more interesting than those of algebra. The necessary technique is extremely simple. The subject is commonly taught in secondary schools in England, France, and Germany, and appropriate English texts are available.[3]

7. *History and biography.*—Historical and biographical material should be used throughout to make the work more interesting and significant.

8. *Additional electives.*—Additional electives such as *mathematics of investment, shop mathematics, surveying and navigation, descriptive or projective geometry* will appropriately be offered by schools which have special needs or conditions, but it seems unwise for the national committee to attempt to define them pending the results of further experience on the part of these schools.

III. PLANS FOR ARRANGEMENT OF THE MATERIAL.

In the majority of high schools at the present time the topics suggested can probably be given most advantageously as separate units of a three-year program. However, the national committee is of the opinion that methods of organization are being experimentally perfected whereby teachers will be enabled to present much of this material more effectively in combined courses unified by one or more of such central ideas, functionality and graphic representation.

[3] Quotations and typical problems from one of these texts will be found in a supplementary note appended to this chapter.

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As to the arrangement of the material the committee gives below four plans which may be suggestive and helpful to teachers in arranging their courses. No one of them is, however, recommended as superior to the others.

PLAN A.

Tenth year: Plane demonstrative geometry; algebra.
Eleventh year: Statistics, trigonometry, solid geometry.
Twelfth year: The calculus, other elective.

PLAN B.

Tenth year: Plane demonstrative geometry, solid geometry.
Eleventh year: Algebra, trigonometry, statistics.
Twelfth year: The calculus, other elective.

PLAN C.

Tenth year: Plane demonstrative geometry, trigonometry.
Eleventh year: Solid geometry, algebra, statistics.
Twelfth year: The calculus, other elective.

PLAN D.

Tenth year: Algebra, statistics, trigonometry.
Eleventh year: Plane and solid geometry.
Twelfth year: The calculus, other elective.

Additional information on ways of organizing this material will be found in Chapter XII on Mathematics in Experimental Schools.

SUPPLEMENTARY NOTE ON THE CALCULUS AS A HIGH-SCHOOL SUBJECT.

In connection with the recommendations concerning the calculus, such questions as the following may arise: Why should a college subject like this be added to a high-school program? How can it be expected that high-school teachers will have the necessary training and attainments for teaching it? Will not the attempt to teach such a subject result in loss of thoroughness in earlier work? Will anything be gained beyond a mere smattering of the theory? Will the boy or girl ever use the information or training secured? The subsequent remarks are intended to answer such objections as these and to develop more fully the point of view of the committee in recommending the inclusion of elementary work in the calculus in the high-school program.

By the calculus we mean for the present purpose a study of *rates of change*. In nature all things change. How much do they change in a given time? How fast do they change? Do they increase or decrease? When does a changing quantity become largest or smallest? How can rates of changing quantities be compared?

These are some of the questions which lead us to study the elementary calculus. Without its essential principles these questions can not be answered with definiteness.

The following are a few of the specific replies that might be given in answer to the questions listed at the beginning of this note: The difficulties of the college calculus lie mainly outside the boundaries of the proposed work. The elements of the subject present less difficulty than many topics now offered in advanced algebra. It is not implied that in the near future many secondary-school teachers will have any occasion to teach the elementary calculus. It is the culminating subject in a series which only relatively strong schools will complete and only then for a selected group of students. In such schools there should always be teachers competent to teach the elementary calculus here intended. No superficial study of calculus should be regarded as justifying any substantial sacrifice of thoroughness. In the judgment of the committee the introduction of elementary calculus necessarily includes sufficient

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algebra and geometry to compensate for whatever diversion of time from these subjects would be implied.

The calculus of the algebraic polynominal is so simple that a boy or girl who is capable of grasping the idea of limit, of slope, and of velocity, may in a brief time gain an outlook upon the field of mechanics and other exact sciences, and acquire a fair degree of facility in using one of the most powerful tools of mathematics, together with the capacity for solving a number of interesting problems. Morever, the fundamental ideas involved, quite aside from their technical applications, will provide valuable training in understanding and analyzing quantitative relations—and such training is of value to everyone.

The following typical extracts from an English text intended for use in secondary schools may be quoted:

"It has been said that the calculus is that branch of mathematics which schoolboys understand and senior wranglers fail to comprehend. * * * So long as the graphic treatment and practical applications of the calculus are kept in view, the subject is an extremely easy and attractive one. Boys can be taught the subject early in their mathematical career, and there is no part of their mathematical training that they enjoy better or which opens up to them wider fields of useful exploration. * * * The phenomena must first be known practically and then studied philosophically. To reverse the order of these processes is impossible."

The text in question, after an interesting historical sketch, deals with such problems as the following:

A train is going at the rate of 40 miles an hour. Represent this graphically.

At what rate is the length of the daylight increasing or decreasing on December 31, March 26, etc.? (From tabular data.)

A cart going at the rate of 5 miles per hour passes a milestone, and 14 minutes afterwards a bicycle, going in the same direction at 12 miles an hour, passes the same milestone. Find when and where the bicycle will overtake the cart.

A man has 4 miles of fencing wire and wishes to fence in a rectangular piece of prairie land through which a straight river flows, the bank of the stream being utilized as one side of the inclosure. How can he do this so as to inclose as much land as possible?

A circular tin canister closed at both ends has a surface area of 100 square centimeters. Find the greatest volume it can contain.

Post-office regulations prescribe that the combined length and girth of a parcel must not exceed 6 feet. Find the maximum volume of a parcel whose shape is a prism with the ends square.

A pulley is fixed 15 feet above the ground, over which passes a rope 30 feet long with one end attached to a weight which can hang freely, and the other end is held by a man at a height of 3 feet from the ground. The man walks horizontally away from beneath the pulley at the rate of 3 feet per second. Find the rate at which the weight rises when it is 10 feet above the ground.

The pressure on the surface of a lake due to the atmosphere is known to be 14 pounds per square inch. The pressure in the liquid x inches below the surface is known to be given by the law $dp/dx=0.036$. Find the pressure in the liquid at a depth of 10 feet.

The arch of a bridge is parabolic in form. It is 5 feet wide at the base and 5 feet high. Find the volume of water that passes through per second in a flood when the water is rushing at the rate of 10 feet per second.

A force of 20 tons compresses the spring buffer of a railway stop through 1 inch, and the force is always proportional to the compression produced. Find the work done by a train which compresses a pair of such stops through 6 inches.

These may illustrate the aims and point of view of the proposed work. It will be noted that not all of them involve calculus, but those that do not lead up to it.

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Chapter V.

COLLEGE ENTRANCE REQUIREMENTS.

The present chapter is concerned with a study of topics and training in elementary mathematics that will have most value as preparation for college work, and with recommendations of definitions of college-entrance requirements in elementary algebra and plane geometry.

General considerations.—The primary purpose of college-entrance requirements is to test the candidate's ability to benefit by college instruction. This ability depends, so far as our present inquiry is concerned, upon (1) general intelligence, intellectual maturity and mental power; (2) specific knowledge and training required as preparation for the various courses of the college curriculum.

Mathematical ability appears to be a sufficient but not a necessary condition for general intelligence.[1] For this, as well as for other reasons, it would appear that *college-entrance requirements in mathematics should be formulated primarily on the basis of the special knowledge and training required for the successful study of courses which the student will take in college.*

The separation of prospective college students from the others in the early years of the secondary school is neither feasible nor desirable. It is therefore obvious that secondary-school courses in mathematics can not be planned with specific reference to college-entrance requirements. Fortunately there appears to be no real conflict of interest between those students who ultimately go to college and those who do not, so far as mathematics is concerned. It will be made clear in what follows that a course in this subject, covering from two to two and one-half years in a standard four-year high school, and so planned as to give the most valuable mathematical training which the student is capable of receiving, will provide adequate preparation for college work.

Topics to be included in high-school courses.—In the selection of material of instruction for high-school courses in mathematics, its value as preparation for college courses in mathematics need not be specifically considered. Not all college students study mathematics; it is therefore reasonable to expect college departments in this sub-

[1] A recent investigation made by the department of psychology at Dartmouth College showed that all students of high rank in mathematics had a high rating on general intelligence; the converse was not true, however.

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ject to adjust themselves to the previous preparation of their students. Nearly all college students do, however, study one or more of the physical sciences (astronomy, physics, chemistry) and one or more of the social sciences (history, economics, political science, sociology). Entrance requirements must therefore insure adequate mathematical preparation in these subjects. Moreover, it may be assumed that adequate preparation for these two groups of subjects will be sufficient for all other subjects for which the secondary schools may be expected to furnish the mathematical prerequisites.

The national committee recently conducted an investigation for the purpose of securing information as to the content of high-school courses of instruction most desirable from the point of view of preparation for college work. A number of college teachers, prominent in their respective fields, were asked to assign to each of the topics in the following table an estimate of its value as preparation for the elementary courses in their respective subjects. Table I gives a summary of the replies, arranged in two groups—"Physical sciences," including astronomy, physics, and chemistry; and "Social sciences," including history, economics, sociology, and political science.

The high value attached to the following topics is significant: Simple formulas—their meaning and use; the linear and quadratic functions and variation; numerical trigonometry; the use of logarithms and other topics relating to numerical computation; statistics. These all stand well above such standard requirements as arithmetic and geometric progression, binomial theorem, theory of exponents, simultaneous equations involving one or two quadratic equations, and literal equations.

These results would seem to indicate that a modification of present college-entrance requirements in mathematics is desirable from the point of view of college teachers in departments other than mathematics. It is interesting to note how closely the modifications suggested by this inquiry correspond to the modifications in secondary-school mathematics foreshadowed by the study of needs of the high-school pupil irrespective of his possible future college attendance. The recommendations made in Chapter II that functional relationship be made the "underlying principle of the course," that the meaning and use of simple formulas be emphasized, that more attention be given to numerical computation (especially to the methods relating to approximate data), and that work on numerical trigonometry and statistics be included, have received widespread approval throughout the country. That they should be in such close accord with the desires of college teachers in the fields of physical and social sciences as to entrance requirements is striking. We find here the justification for the belief expressed earlier in this report that there is no real conflict between the needs of students who ultimately go to college and those who do not.

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TABLE 1.—*Value of topics as preparation for elementary college courses.*

[In the headings of the table, E=essential, C=of considerable value, S=of some value, O=of little or no value, N=number of replies received. The figures in the first four columns of each group are percentages of the number of replies received.]

	Physical sciences.					Social sciences.				
	E.	C.	S.	O.	N.	E.	C.	S.	O.	N.
Negative numbers—their meaning and use	79	5	10	5	39	45	17	22	17	18
Imaginary numbers—their meaning and use	23	21	25	31	39	13	13	37	37	16
Simple formulas—their meaning and use	93	5	2	....	41	47	26	21	5	19
Graphic representation of statistical data	57	25	15	3	40	57	24	14	5	21
Graphs (mathematical and empirical):										
(*a*) As a method of representing dependence	62	16	22	....	37	15	54	15	15	13
(*b*) As a method of solving problems	45	20	28	6	25	18	18	46	18	11
The linear function, $y=mx+b$	78	14	8	....	37	29	29	14	29	14
The quadratic function, $y=ax^2+bx+c$	59	21	17	3	34	8	8	33	50	12
Equations: Problems leading to—										
Linear equations in one unknown	98	2	....	....	41	40	7	20	33	15
Quadratic equations in one unknown	78	15	5	2	40	31	8	8	54	13
Simultaneous linear equations in 2 unknowns	71	24	3	3	38	33	8	....	58	12
Simultaneous linear equations in more than 2 unknowns	43	29	23	6	35	8	8	17	67	12
One quadratic and one linear equation in 2 unknowns	40	24	27	9	33	....	9	9	82	11
Two quadratic equations in 2 unknowns	31	19	28	22	32	....	9	....	91	11
Equations of higher degree than the second	10	32	32	26	31	....	....	9	91	11
Literal equations (other than formulas)	43	18	32	7	28	....	10	40	50	10
Ratio and proportion	84	8	3	5	39	37	26	32	5	19
Variation	50	13	20	17	30	17	33	25	25	12
Numerical computation:										
With approximate data—rational use of significant figures	61	36	....	3	39	40	27	20	13	12
Short-cut methods	27	38	24	10	37	29	35	23	12	17
Use of logarithms	62	29	7	2	42	12	29	29	29	17
Use of other tables to facilitate computation	24	45	26	5	38	18	29	41	12	17
Use of slide rule	24	39	26	12	38	11	39	28	22	18
Theory of exponents	36	31	25	8	36	....	21	21	57	14
Theory of logarithms	34	26	21	18	38	7	13	20	60	15
Arithmetic progression	16	32	38	13	37	23	29	12	35	17
Geometric progression	19	27	40	14	37	23	25	18	35	17
Binomial theorem	35	32	18	13	37	13	20	27	40	15
Probability	9	32	41	19	32	20	35	35	10	20
Statistics:										
Meaning and use of elementary concepts	23	28	31	17	29	55	36	5	5	22
Frequency distributions and frequency curves	15	19	35	32	26	47	33	10	10	21
Correlation	11	18	39	32	28	33	47	14	5	21
Numerical trigonometry:										
Use of sine, cosine, and tangent in the solution of simple problems involving right triangles	68	21	3	8	38	....	....	25	75	12
Demonstrative geometry	68	15	12	6	34	....	21	43	36	14
Plane trigonometry (usual course)	57	27	11	5	37	8	23	31	38	13
Analytic geometry:										
Fundamental conceptions and methods in the plane	32	45	19	3	31	....	15	38	46	13
Systematic treatment of—										
Straight line	34	37	20	9	35	9	9	18	64	11
Circle	29	43	20	9	35	....	18	9	73	11
Conic sections	18	41	26	15	34	....	9	18	73	11
Polar coordinates	18	26	41	15	34	....	....	18	82	11
Empirical curves and fitting curves to observations	12	38	38	12	34	8	....	25	67	12

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TABLE 2.—*Topics in order of value as preparation for elementary college courses.*

[The figures in the column headed "E" are taken from Table 1, taking in each case the higher of the two "E" ratings there given. The column headed "E+C" gives in each case the sum of the two ratings for "E" and "C." An asterisk indicates that the topic in question is now included in the definitions of the college entrance examination board.[1]]

	E.	E+C.
*Linear equations in one unknown	98	100
Simple formulas—their meaning and use	93	98
*Ratio and proportion	84	92
*Negative numbers—their meaning and use	79	84
*Quadratic equations in one unknown	78	93
The linear function: $y=mx+b$	78	92
*Simultaneous linear equations in two unknowns	71	95
Numerical trigonometry—the use of the sine, cosine, and tangent in the solution of simple problems involving right triangles	68	89
*Demonstrative geometry	68	83
Use of logarithms in computation	62	91
*Graphs as a method of representing dependence	62	78
Computation with approximate data—rational use of significant figures	61	97
The quadratic function: $y=ax^2+bx+c$	59	80
Plane trigonometry—usual course	57	84
Graphic representation of statistical data	57	82
Statistics—meaning and use of elementary concepts	55	91
Variation	50	63
Statistics—frequency distributions and curves	47	80
*Graphic solution of problems	45	65
*Literal equations	43	61
*Simultaneous linear equations in more than 2 unknowns	43	72
*Simultaneous equations, one quadratic, one linear	40	64
*Theory of exponents	36	67
*Binomial theorem	35	67
Analytic geometry of the straight line	34	71
Theory of logarithms	34	60
Statistics—correlation	33	80
Analytic geometry—fundamental conceptions	32	77
*Simultaneous quadratic equations	31	50
Analytic geometry of the circle	29	72
Short-cut methods of computation	29	65
Use of tables in computation (other than logarithms)	24	69
Use of slide rule	24	63
Imaginary numbers	24	44
*Arithmetic progression	23	52
*Geometric progression	23	48
Probability	20	55
Conic sections	18	59
Polar coordinates	18	44
Empirical curves and fitting curves to observations	12	50
Equations of higher degree than the second	10	42

[1] The list includes all the requirements of the college entrance examination board except those relating to algebraic technique. The topic of "Negative numbers" has also been given an asterisk, as it is clearly implied, though not explicitly mentioned, in the C. E. E. B. definitions.

The attitude of the colleges.—Mathematical instruction in this country is at present in a period of transition. While a considerable number of our most progressive schools have for several years given courses embodying most of the recommendations contained in Chapters II, III, and IV of the present report, the large majority of schools are still continuing the older types of courses or are only just beginning to introduce modifications. The movement toward reorganization is strong, however, throughout the country, not only in the standard four-year high schools but also in the newer junior high schools.

During this period of transition it should be the policy of the colleges, while exerting a desirable steadying influence, to help the movement toward a sane reorganization. In particular they should take care not to place obstacles in the way of changes which are

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clearly in the interest of more effective college preparation, as well as of better general education.

College-entrance requirements will continue to exert a powerful influence on secondary-school teaching. Unless they reflect the spirit of sound progressive tendencies, they will constitute a serious obstacle.

In the present chapter revised definitions of college-entrance requirements in plane geometry and elementary algebra are presented. So far as plane geometry is concerned, the problem of definition is comparatively simple. The proposed definition of the requirement in plane geometry does not differ from the one now in effect under the college entrance examination board. A list of propositions and constructions has however been prepared, and is given in the next chapter for the guidance of teachers and examiners.

In elementary algebra a certain amount of flexibility is obviously necessary both on account of the quantitative differences among colleges and of the special conditions attending a period of transition. The former differences are recognized by the proposal of a minor and a major requirement in elementary algebra. The second of these includes the first and is intended to correspond with the two-unit rating of the C. E. E. B.

In connection with this matter of units, the committee wishes particularly to disclaim any emphasis upon a special number of years or hours. The unit terminology is doubtless too well established to be entirely ignored in formulating college-entrance requirements, but the standard definition of unit [3] has never been precise, and will now become much less so with the inclusion of the newer six-year program. A time allotment of 4 or 5 hours per week in the seventh year can certainly not have the same weight as the same number of hours in the twelfth year, and the disparity will vary with different subjects. *What is really important is the amount of subject matter and the quality of work done in it.* The "unit" can not be anything but a crude approximation to this. The distribution of time in the school program should not be determined by any arbitrary unit scale.

As a further means of securing reasonable flexibility, the committee recommends that for a limited time—say five years—the option be offered between examinations based on the old and on the new definitions, so far as differences between them may make this desirable.

In view of the changes taking place at the present time in mathematical courses in secondary schools, and the fact that college-entrance

[3] The following definition, formulated by the National Committee on Standards of Colleges and Secondary Schools, has been given the approval of the C. E. E. B. "A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work. A four-year secondary school curriculum should be regarded as representing not more than 16 units of work."

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requirements should so soon as possible reflect desirable changes and assist in their adoption, the national committee recommends that either the American Mathematical Society or the Mathematical Association of America (or both) maintain a permanent committee on college-entrance requirements in mathematics, such a committee to work in close cooperation with other agencies which are now or may in the future be concerned in a responsible way with the relations between colleges and secondary schools.

DEFINITION OF COLLEGE ENTRANCE REQUIREMENTS.

ELEMENTARY ALGEBRA.

Minor requirement.—The meaning, use, and evaluation (including the necessary transformations) of simple formulas involving ideas with which the student is familiar and the derivation of such formulas from rules expressed in words.

The dependence of one variable upon another. Numerous illustrations and problems involving the linear function $y=mx+b$. Illustrations and problems involving the quadratic function $y=kx^2$.

The graph and graphic representations in general; their construction and interpretation, including the representation of statistical data and the use of the graph to exhibit dependence.

Positive and negative numbers; their meaning and use.

Linear equations in one unknown quantity; their use in solving problems.

Sets of linear equations involving two unknown quantities; their use in solving problems.

Ratio, as a case of simple fractions; proportion without the theorems on alternation, etc.; and simple cases of variation.

The essentials of algebraic technique. This should include—

(*a*) The four fundamental operations.

(*b*) Factoring of the following types: Common factors of the terms of a polynomial; the difference of two squares; trinomials of the second degree (including the square of a binomial) that can be easily factored by trial.

(*c*) Fractions, including complex fractions of a simple type.

(*d*) Exponents and radicals. The laws for positive integral exponents; the meaning and use of fractional exponents, but not the formal theory. The consideration of radicals may be confined to the simplification of expressions of the form $\sqrt{a^2b}$ and $\sqrt{a/b}$ and to the evaluation of simple expressions involving the radical sign. A process for extracting the square root of a number should be included but not the process for extracting the square root of a polynomial.

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Numerical trigonometry. The use of the sine, cosine, and tangent in solving right triangles. The use of three or four place tables of natural functions.

Major requirement.—In addition to the minor requirement as specified above, the following should be included:

Illustrations and problems involving the quadratic function $y = ax^2 + bx + c$.

Quadratic equations in one unknown; their use in solving problems.

Exponents and radicals. Zero and negative exponents, and more extended treatment of fractional exponents. Rationalizing denominators. Solution of simple types of radical equations.

The use of logarithmic tables in computation without the formal theory.

Elementary statistics, including a knowledge of the fundamental concepts and simple frequency distributions, with graphic representations of various kinds.

The binomial theorem for positive integral exponents less than 8; with such applications as compound interest.

The formula for the nth term, and the sum of n terms, of arithmetic and geometric progressions, with applications.

Simultaneous linear equations in three unknown quantities and simple cases of simultaneous equations involving one or two quadratic equations; their use in solving problems.

Drill in algebraic manipulation should be limited, particularly in the minor requirement, by the purpose of securing a thorough understanding of important principles and facility in carrying out those processes which are fundamental and of frequent occurrence either in common life or in the subsequent courses that a substantial proportion of the pupils will study. Skill in manipulation must be conceived of throughout as a means to an end, not as an end in itself. Within these limits, skill and accuracy in algebraic technique are of prime importance, and drill in this subject should be extended far enough to enable students to carry out the fundamentally essential processes accurately and with reasonable speed.

The consideration of literal equations, when they serve a significant purpose, such as the transformation of formulas, the derivation of a general solution (as of the quadratic equation), or the proof of a theorem, is important. As a means for drill in algebraic technique they should be used sparingly.

The solution of problems should offer opportunity throughout the course for considerable arithmetical and computational work. The conception of algebra as an extension of arithmetic should be made significant both in numerical applications and in elucidating algebraic

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principles. Emphasis should be placed upon the use of common sense and judgment in computing from approximate data, especially with regard to the number of figures retained, and on the necessity for checking the results. The use of tables to facilitate computation (such as tables of squares and square roots, of interest, and of trigonometric functions) should be encouraged.

PLANE GEOMETRY.

The usual theorems and constructions of good textbooks, including the general properties of plane rectilinear figures; the circle and the measurement of angles; similar polygons; areas; regular polygons and the measurement of the circle. The solution of numerous original exercises, including locus problems. Applications to the mensuration of lines and plane surfaces.

The scope of the required work in plane geometry is indicated by the List of Fundamental Propositions and Constructions, which is given in the next chapter. This list indicates in Section I the type of proposition which, in the opinion of the committee, may be assumed without proof or given informal treatment. Section II contains 52 propositions and 19 constructions which are regarded as so fundamental that they should constitute the common minimum of all standard courses in plane geometry. Section III gives a list of subsidiary theorems which suggests the type of additional propositions that should be included in such courses.

College-entrance examinations.—College-entrance examinations exert in many schools, and especially throughout the eastern section of the country, an influence on secondary school teaching which is very far-reaching. It is, therefore, well within the province of the national committee to inquire whether the prevailing type of examination in mathematics serves the best interests of mathematical education and of college preparation.

The reason for the almost controlling influence of entrance examinations in the schools referred to is readily recognized. Schools sending students to such colleges for men as Harvard, Yale, and Princeton, to the larger colleges for women, or to any institution where examinations form the only or prevailing mode of admission, inevitably direct their instruction toward the entrance examination. This remains true even if only a small percentage of the class intends to take these examinations, the point being that the success of a teacher is often measured by the success of his or her students in these examinations.

In the judgment of the committee, the prevailing type of entrance examination in algebra is primarily a test of the candidate's skill in

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formal manipulation, and not an adequate test of his understanding or of his ability to apply the principles of the subject. Moreover, it is quite generally felt that the difficulty and complexity of the formal manipulative questions, which have appeared on recent papers set by colleges and by such agencies as the College Entrance Examination Board, has often been excessive. As a result, teachers preparing pupils for these examinations have inevitably been led to devote an excessive amount of time to drill in algebraic technique, without insuring an adequate understanding of the principles involved. Far from providing the desired facility, this practice has tended to impair it. For "practical skill, modes of effective technique, can be intelligently, nonmechanically used only when intelligence has played a part in their acquisition." (Dewey, *How We Think*, p. 52.)

Moreover, it must be noted that authors and publishers of textbooks are under strong pressure to make their content and distribution of emphasis conform to the prevailing type of entrance examination. Teachers in turn are too often unable to rise above the textbook. An improvement in the examinations in this respect will cause a corresponding improvement in textbooks and in teaching.

On the other hand, the makers of entrance examinations in algebra cannot be held solely responsible for the condition described. Theirs is a most difficult problem. Not only can they reply that as long as algebra is taught as it is, examinations must be largely on technique,[4] but they can also claim with considerable force that technical facility is the only phase of algebra that can be fairly tested by an examination; that a candidate can rarely do himself justice amid unfamiliar surroundings and subject to a time limit on questions involving real thinking in applying principles to concrete situations; and that we must face here a real limitation on the power of an examination to test attainment. Many, and perhaps most, teachers will agree with this claim. Past experience is on their side; no generally accepted and effective "power test" in mathematics has as yet been devised and, if devised, it might not be suitable for use under conditions prevailing during an entrance examination.

But if it is true that the power of an examination is thus inevitably limited, the wisdom and fairness of using it as the sole means of admission to college is surely open to grave doubt. That many unqualified candidates are admitted under this system is not open to question. Is it not probable that many qualified candidates are at the same time excluded? If the entrance examination is a fair test of manipulative skill only, should not the colleges use additional means for learning something about the candidate's other abilities and qualifications?

[4] The vicious circle is now complete. Algebra is taught mechanically because of the character of the entrance examination; the examination, in order to be fair, must conform to the character of the teaching.

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Some teachers believe that an effective "power test" in mathematics is possible. Efforts to devise such a test should receive every encouragement.

In the meantime, certain desirable modifications of the prevailing type of entrance examinations are possible. The college entrance examination board recently appointed a committee to consider this question and a conference [5] on this subject was held by representatives of the college entrance examination board, members of the national committee, and others. The following recommendations are taken from the report of the committee just referred to:

Fully one-third of the questions should be based on topics of such fundamental importance that they will have been thoroughly taught, carefully reviewed, and deeply impressed by effective drill. . . . They should be of such a degree of difficulty that any pupil of regular attendance, faithful application, and even moderate ability may be expected to answer them satisfactorily.

There should be both simple and difficult questions testing the candidate's ability to apply the principles of the subject. The early ones of the easy questions should be really easy for the candidate of good average ability who can do a little thinking under the stress of an examination; but even these questions should have genuine scientific content.

There should be a substantial question which will put the best candidates on their mettle, but which is not beyond the reach of a fair proportion of the really good candidates. This question should test the normal workings of a well-trained mind. It should be capable of being thought out in the limited time of the examination. It should be a test of the candidate's grasp and insight—not a catch question or a question of unfamiliar character making extraordinary demands on the critical powers of the candidate, or one the solution of which depends on an inspiration. Above all, this question should lie near to the heart of the subject as all well-prepared candidates understand the subject.

As a rule, a question should consist of a single part and be framed to test one thing—not pieced together out of several unrelated and perhaps unequally important parts.

Each question should be a substantial test on the topic or topics which it represents. It is, however, in the nature of the case impossible that all questions be of equal value.

Care should be used that the examination be not too long. * * * The examiner should be content to ask questions on the important topics, so chosen that their answers will be fair to the candidate and instructive to the readers; and beyond this merely to sample the candidate's knowledge on the minor topics.

The national committee suggests the following additional principles: The examination as a whole should, as far a practicable, reflect the principle that algebraic technique is a means to an end, and not an end in itself.

Questions that require of the candidate skill in algebraic manipulation beyond the needs of actual application should be used very sparingly.

An effort should be made to devise questions which will fairly test the candidate's understanding of principles and his ability to apply them, while involving a minimum of manipulative complexity.

[5] At this conference the following vote was unanimously passed: "Voted, that the results of examinations (of the college entrance examination board), be reported by letters A, B, C, D, E and that the definition of the groups represented by these letters should be determined in each year by the distribution of ability in a standard group of papers representing widely both public and private schools."

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The examinations in geometry should be definitely constructed to test the candidate's ability to draw valid conclusions rather than his ability to memorize an argument.

A chapter on mathematical terms and symbols is included in this report.[6] It is hoped that examining bodies will be guided by the recommendations there made relative to the use of terms and symbols in elementary mathematics.

The college entrance examination board, early in 1921, appointed a commission to recommend such revisions as might seem necessary in the definitions of the requirements in the various subjects of elementary mathematics. The recommendations contained in the present chapter have been laid before this commission. It is hoped that the commission's report, when it is finally made effective by action of the college entrance examination board and the various colleges concerned, will give impetus to the reorganization of the teaching of elementary mathematics along the lines recommended in the report of the national committee.

[6] See Ch. VIII.

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Chapter VI.

LISTS OF PROPOSITIONS IN PLANE AND SOLID GEOMETRY.

General basis of the selection of material.—The subcommittee appointed to prepare a list of basal propositions made a careful study of a number of widely used textbooks on geometry. The bases of selection of the propositions were two: (1) The extent to which the propositions and corollaries were used in subsequent proofs of important propositions and exercises; (2) the value of the propositions in completing important pieces of theory. Although the list of theorems and problems is substantially the same in nearly all textbooks in general use in this country, the wording, the sequence, and the methods of proof vary to such an extent as to render difficult a definite statement as to the number of times a proposition is used in the several books examined. A tentative table showed, however, less variation than might have been anticipated.

Classification of propositions.—The classification of propositions is not the same in plane geometry as in solid geometry. This is partly due to the fact that it is generally felt that the student should limit his construction work to figures in a plane and in which the compasses and straight edge are sufficient. The propositions have been divided as follows:

Plane geometry: I. Assumptions and theorems for informal treatment; II. Fundamental theorems and constructions: A. Theorems, B. Constructions; III. Subsidiary theorems.

Solid geometry: I. Fundamental theorems; II. Fundamental propositions in mensuration; III. Subsidiary theorems; IV. Subsidiary propositions in mensuration.

PLANE GEOMETRY.

I. *Assumptions and theorems for informal treatment.*—This list contains propositions which may be assumed without proof (postulates), and theorems which it is permissible to treat informally. Some of these propositions will appear as definitions in certain methods of treatment. Moreover, teachers should feel free to require formal proofs in certain cases, if they desire to do so. The precise wording given is not essential, nor is the order in which the propositions are here listed. The list should be taken as representative of

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the type of propositions which may be assumed, or treated informally, rather than as exhaustive.

1. Through two distinct points it is possible to draw one straight line, and only one.
2. A line segment may be produced to any desired length.
3. The shortest path between two points is the line segment joining them.
4. One and only one perpendicular can be drawn through a given point to a given straight line.
5. The shortest distance from a point to a line is the perpendicular distance from the point to the line.
6. From a given center and with a given radius one and only one circle can be described in a plane.
7. A straight line intersects a circle in at most two points.
8. Any figure may be moved from one place to another without changing its shape or size.
9. All right angles are equal.
10. If the sum of two adjacent angles equals a straight angle, their exterior sides form a straight line.
11. Equal angles have equal complements and equal supplements.
12. Vertical angles are equal.
13. Two lines perpendicular to the same line are parallel.
14. Through a given point not on a given straight line, one straight line, and only one, can be drawn parallel to the given line.
15. Two lines parallel to the same line are parallel to each other.
16. The area of a rectangle is equal to its base times its altitude.

II. *Fundamental theorems and constructions.*—It is recommended that theorems and constructions (other than originals) to be proved on college entrance examinations be chosen from the following list. Originals and other exercises should be capable of solution by direct reference to one or more of these propositions and constructions. It should be obvious that any course in geometry that is capable of giving adequate training must include considerable additional material. The order here given is not intended to signify anything as to the order of presentation. It should be clearly understood that certain of the statements contain two or more theorems, and that the precise wording is not essential. The committee favors entire freedom in statement and sequence.

A. THEOREMS.

1. Two triangles are congruent if [1] (*a*) two sides and the included angle of one are equal, respectively, to two sides and the included angle of the other; (*b*) two angles and a side of one are equal, respectively, to two angles and the corresponding side of the other; (*c*) the three sides of one are equal, respectively, to the three sides of the other.
2. Two right triangles are congruent if the hypotenuse and one other side of one are equal, respectively, to the hypotenuse and another side of the other.
3. If two sides of a triangle are equal, the angles opposite these sides are equal; and conversely.[2]
4. The locus of a point (in a plane) equidistant from two given points is the perpendicular bisector of the line segment joining them.

[1] Teachers should feel free to separate this theorem into three distinct theorems and to use other phraseology for any such proposition. For example, in 1, "Two triangles are equal if" * * * "a triangle is determined by * * *," etc. Similarly in 2, the statement might read: "Two right triangles are congruent if, beside the right angles, any two parts (not both angles) in the one are equal to corresponding parts of the other."

[2] It should be understood that the converse of a theorem need not be treated in connection with the theorem itself, it being sometimes better to treat it later. Furthermore a converse may occasionally be accepted as true in an elementary course, if the necessity for proof is made clear. The proof may then be given later.

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5. The locus of a point equidistant from two given intersecting lines is the pair of lines bisecting the angles formed by these lines.

6. When a transversal cuts two parallel lines, the alternate interior angles are equal; and conversely.

7. The sum of the angles of a triangle is two right angles.

8. A parallelogram is divided into congruent triangles by either diagonal.

9. Any (convex) quadrilateral is a parallelogram (*a*) if the opposite sides are equal; (*b*) if two sides are equal and parallel.

10. If a series of parallel lines cut off equal segments on one transversal, they cut off equal segments on any transversal.

11. (*a*) The area of a parallelogram is equal to the base times the altitude.
(*b*) The area of a triangle is equal to one-half the base times the altitude.
(*c*) The area of a trapezoid is equal to half the sum of its bases times its altitude.
(*d*) The area of a regular polygon is equal to half the product of its apothem and perimeter.

12. (*a*) If a straight line is drawn through two sides of a triangle parallel to the third side, it divides these sides proportionally.
(*b*) If a line divides two sides of a triangle proportionally, it is parallel to the third side. (Proofs for commensurable cases only.)
(*c*) The segments cut off on two transversals by a series of parallels are proportional.

13. Two triangles are similar if (*a*) they have two angles of one equal, respectively, to two angles of the other; (*b*) they have an angle of one equal to an angle of the other and the including sides are proportional; (*c*) their sides are respectively proportional.

14. If two chords intersect in a circle, the product of the segments of one is equal to the product of the segments of the other.

15. The perimeters of two similar polygons have the same ratio as any two corresponding sides.

16. Polygons are similar, if they can be decomposed into triangles which are similar and similarly placed; and conversely.

17. The bisector of an (interior or exterior) angle of a triangle divides the opposite side (produced if necessary) into segments proportional to the adjacent sides.

18. The areas of two similar triangles (or polygons) are to each other as the squares of any two corresponding sides.

19. In any right triangle the perpendicular from the vertex of the right angle on the hypotenuse divides the triangle into two triangles each similar to the given triangle.

20. In a right triangle the square on the hypotenuse is equal to the sum of the squares on the other two sides.

21. In the same circle, or in equal circles, if two arcs are equal, their central angles are equal; and conversely.

22. In any circle angles at the center are proportional to their intercepted arcs. (Proof for commensurable case only.)

23. In the same circle or in equal circles, if two chords are equal their corresponding arcs are equal; and conversely.

24. (*a*) A diameter perpendicular to a chord bisects the chord and the arcs of the chord. (*b*) A diameter which bisects a chord (that is not a diameter) is perpendicular to it.

25. The tangent to a circle at a given point is perpendicular to the radius at that point; and conversely.

26. In the same circle or in equal circles, equal chords are equally distant from the center; and conversely.

27. An angle inscribed in a circle is equal to half the central angle having the same arc.

28. Angles inscribed in the same segment are equal.

29. If a circle is divided into equal arcs, the chords of these arcs form a regular inscribed polygon and tangents at the points of division form a regular circumscribed polygon.

30. The circumference of a circle is equal to $2\pi r$. (Informal proof only.)

31.[3] The area of a circle is equal to πr^2. (Informal proof only.)

The treatment of the mensuration of the circle should be based upon related theorems concerning regular polygons, but it should be informal as to the limiting processes involved. The aim should be an understanding of the concepts involved, so far as the capacity of the pupil permits.

[3] The total number of theorems given in this list when separated, as will probably be found advantageous in teaching this number including the converses indicated, is 52.

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B. CONSTRUCTIONS.

1. Bisect a line segment and draw the perpendicular bisector.
2. Bisect an angle.
3. Construct a perpendicular to a given line through a given point.
4. Construct an angle equal to a given angle.
5. Through a given point draw a straight line parallel to a given straight line.
6. Construct a triangle, given (*a*) the three sides; (*b*) two sides and the included angle; (*c*) two angles and the included side.
7. Divide a line segment into parts proportional to given segments.
8. Given an arc of a circle, find its center.
9. Circumscribe a circle about a triangle.
10. Inscribe a circle in a triangle.
11. Construct a tangent to a circle through a given point.
12. Construct the fourth proportional to three given line segments.
13. Construct the mean proportional between two given line segments.
14. Construct a triangle (polygon) similar to a given triangle (polygon).
15. Construct a triangle equal to a given polygon.
16. Inscribe a square in a circle.
17. Inscribe a regular hexagon in a circle.

III. *Subsidiary list of propositions.*—The following list of propositions is intended to suggest some of the additional material referred to in the introductory paragraph of Section II. It is not intended, however, to be exhaustive; indeed, the committee feels that teachers should be allowed considerable freedom in the selection of such additional material, theorems, corollaries, originals, exercises, etc., in the hope that opportunity will thus be afforded for constructive work in the development of courses in geometry.

1. When two lines are cut by a transversal, if the corresponding angles are equal, or if the interior angles on the same side of the transversal are supplementary, the lines are parallel.
2. When a transversal cuts two parallel lines, the corresponding angles are equal, and the interior angles on the same side of the transversal are supplementary.
3. A line perpendicular to one of two parallels is perpendicular to the other also.
4. If two angles have their sides respectively parallel or respectively perpendicular to each other, they are either equal or supplementary.
5. Any exterior angle of a triangle is equal to the sum of the two opposite interior angles.
6. The sum of the angles of a convex polygon of n sides is $2(n-2)$ right angles.
7. In any parallelogram (*a*) the opposite sides are equal; (*b*) the opposite angles are equal; (*c*) the diagonals bisect each other.
8. Any (convex) quadrilateral is a parallelogram, if (*a*) the opposite angles are equal; (*b*) the diagonals bisect each other.
9. The medians of a triangle intersect in a point which is two-thirds of the distance from the vertex to the mid-point of the opposite side.
10. The altitudes of a triangle meet in a point.
11. The perpendicular bisectors of the sides of a triangle meet in a point.
12. The bisectors of the angles of a triangle meet in a point.
13. The tangents to a circle from an external point are equal.
14.[1] (*a*) If two sides of a triangle are unequal, the greater side has the greater angle opposite it, and conversely.

(*b*) If two sides of one triangle are equal respectively to two sides of another triangle, but the included angle of the first is greater than the included angle of the second, then the third side of the first is greater than the third side of the second, and conversely.

(*c*) If two chords are unequal, the greater is at the less distance from the center, and conversely.

[1] Such inequality theorems as these are of importance in developing the notion of dependence or functionality in geometry. The fact that they are placed in the "Subsidiary list of propositions" should not imply that they are considered of less educational value than those in List II. They are placed here because they are not "fundamental" in the same sense that the theorems of List II are fundamental.

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(*d*) The greater of two minor arcs has the greater chord, and conversely.

15. An angle inscribed in a semicircle is a right angle.

16. Parallel lines tangent to or cutting a circle intercept equal arcs on the circle.

17. An angle formed by a tangent and a chord of a circle is measured by half the intercepted arc.

18. An angle formed by two intersecting chords is measured by half the sum of the intercepted arcs.

19. An angle formed by two secants or by two tangents to a circle is measured by half the difference between the intercepted arcs.

20. If from a point without circle a secant and a tangent are drawn, the tangent is the mean proportional between the whole secant and its external segment.

21. Parallelograms or triangles of equal bases and altitudes are equal.

22. The perimeters of two regular polygons of the same number of sides are to each other as their radii and also as their apothems.

SOLID GEOMETRY.

In the following list the precise wording and the sequence are not considered:

I. FUNDAMENTAL THEOREMS.

1. If two planes meet, they intersect in a straight line.

2. If a line is perpendicular to each of two intersecting lines at their point of intersection it is perpendicular to the plane of the two lines.

3. Every perpendicular to a given line at a given point lies in a plane perpendicular to the given line at the given point.

4. Through a given point (internal or external) there can pass one and only one perpendicular to a plane.

5. Two lines perpendicular to the same plane are parallel.

6. If two lines are parallel, every plane containing one of the lines and only one is parallel to the other.

7. Two planes perpendicular to the same line are parallel.

8. If two parallel planes are cut by a third plane, the lines of intersection are parallel.

9. If two angles not in the same plane have their sides respectively parallel in the same sense, they are equal and their planes are parallel.

10. If two planes are perpendicular to each other, a line drawn in one of them perpendicular to their intersection is perpendicular to the other.

11. If a line is perpendicular to a given plane, every plane which contains this line is perpendicular to the given plane.

12. If two intersecting planes are each perpendicular to a third plane, their intersection is also perpendicular to that plane.

13. The sections of a prism made by parallel planes cutting all the lateral edges are congruent polygons.

14. An oblique prism is equal to a right prism whose base is equal to a right section of the oblique prism and whose altitude is equal to a lateral edge of the oblique prism.

15. The opposite faces of a parallelopiped are congruent.

16. The plane passed through two diagonally opposite edges of a parallelopiped divides the parallelopiped into two equal triangular prisms.

17. If a pyramid or a cone is cut by a plane parallel to the base:

(*a*) The lateral edges and the altitude are divided proportionally;

(*b*) The section is a figure similar to the base;

(*c*) The area of the section is to the area of the base as the square of the distance from the vertex is to the square of the altitude of the pyramid or cone.

18. Two triangular pyramids having equal bases and equal altitudes are equal.

19. All points on a circle of a sphere are equidistant from either pole of the circle.

20. On any sphere a point which is at a quadrant's distance from each of two other points not the extremities of a diameter is a pole of the great circle passing through these two points.

21. If a plane is perpendicular to a radius at its extremity on a sphere, it is tangent to the sphere.

22. A sphere can be inscribed in or circumscribed about any tetrahedron.

23. If one spherical triangle is the polar of another, then reciprocally the second is the polar triangle of the first.

24. In two polar triangles each angle of either is the supplement of the opposite side of the other.

25. Two symmetric spherical triangles are equal.

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II. FUNDAMENTAL PROPOSITIONS IN MENSURATION.

26. The lateral area of a prism or a circular cylinder is equal to the product of a lateral edge or element, respectively, by the perimeter of a right section.
27. The volume of a prism (including any parallelopiped) or of a circular cylinder is equal to the product of its base by its altitude.
28. The lateral area of a regular pyramid or a right circular cone is equal to half the product of its slant height by the perimeter of its base.
29. The volume of a pyramid or a cone is equal to one-third the product of its base by its altitude.
30. The area of a sphere.
31. The area of a spherical polygon.
32. The volume of a sphere.

III. SUBSIDIARY THEOREMS.

33. If from an external point a perpendicular and obliques are drawn to a plane, (*a*) the perpendicular is shorter than any oblique; (*b*) obliques meeting the plane at equal distances from the foot of the perpendicular are equal; (*c*) of two obliques meeting the plane at unequal distances from the foot of the perpendicular, the more remote is the longer.
34. If two lines are cut by three parallel planes, their corresponding segments are proportional.
35. Between two lines not in the same plane there is one common perpendicular, and only one.
36. The bases of a cylinder are congruent.
37. If a plane intersects a sphere, the line of intersection is a circle.
38. The volume of two tetrahedrons that have a trihedral angle of one equal to a trihedral angle of the other are to each other as the products of the three edges of these trihedral angles.
39. In any polyhedron the number of edges increased by two is equal to the number of vertices increased by the number of faces.
40. Two similar polyhedrons can be separated into the same number of tetrahedrons similar each to each and similarly placed.
41. The volumes of two similar tetrahedrons are to each other as the cubes of any two corresponding edges.
42. The volumes of two similar polyhedrons are to each other as the cubes of any two corresponding edges.
43. If three face angles of one trihedral angle are equal, respectively, to the three face angles of another the trihedral angles are either congruent or symmetric.
44. Two spherical triangles on the same sphere are either congruent or symmetric if (*a*) two sides and the included angle of one are equal to the corresponding parts of the other; (*b*) two angles and the included side of one are equal to the corresponding parts of the other; (*c*) they are mutually equilateral; (*d*) they are mutually equiangular.
45. The sum of any two face angles of a trihedral angle is greater than the third face angle.
46. The sum of the face angles of any convex polyhedral angle is less than four right angles.
47. Each side of a spherical triangle is less than the sum of the other two sides.
48. The sum of the sides of a spherical polygon is less than 360°.
49. The sum of the angles of a spherical triangle is greater than 180° and less than 540°.
50. There can not be more than five regular polyhedrons.
51. The locus of points equidistant (*a*) from two given points; (*b*) from two given planes which intersect.

IV. SUBSIDIARY PROPOSITIONS IN MENSURATION.

52. The volume of a frustum of (*a*) a pyramid or (*b*) a cone.
53. The lateral area of a frustum of (*a*) pyramid or (*b*) a cone of revolution.
54. The volume of a prismoid (without formal proof).

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Chapter VII.

THE FUNCTION CONCEPT IN SECONDARY-SCHOOL MATHEMATICS.[1]

In Chapter II, and incidentally in later chapters, considerable emphasis has been placed on the function concept or, better, on the idea of relationship between variable quantities as one of the general ideas that should dominate instruction in elementary mathematics. Since this recommendation is peculiarly open to misunderstanding on the part of teachers, it seems desirable to devote a separate chapter to a rather detailed discussion of what the recommendation means and implies.

It will be seen in what follows that there is no disposition to advocate the teaching of any sort of function *theory*. A prime danger of misconception that should be removed at the very outset is that teachers may think it is the notation and the definitions of such a theory that are to be taught. Nothing could be further from the intention of the committee. Indeed, it seems entirely safe to say that probably the word "function" had best not be used at all in the early courses.

What is desired is that the idea of relationship or dependence between variable quantities be imparted to the pupil by the examination of numerous concrete instances of such relationship. He must be shown the workings of relationships in a large number of cases before the abstract idea of relationship will have any meaning for him. Furthermore, the pupil should be led to form the habit of thinking about the connections that exist between related quantities, not merely because such a habit forms the best foundation for a real appreciation of the theory that may follow later, but chiefly because this habit will enable him to think more clearly about the quantities with which he will have to deal in real life, whether or not he takes any further work in mathematics.

Indeed, the reason for insisting so strongly upon attention to the idea of relationships between quantities is that such relationships do occur in real life in connection with practically all of the quantities with which we are called upon to deal in practice. Whereas there can be little doubt about the small value to the student who does

[1] The first draft of this chapter was prepared for the national committee by E. R. Hedrick, of the University of Missouri. It was discussed at the meeting of the committee, Sept. 2–4, 1920; revised by the author, and again discussed Dec. 29–30, 1920, and is now issued as part of the committee's report.

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not go on to higher studies of some of the manipulative processes criticized by the national committee, there can be no doubt at all of the value to all persons of any increase in their ability to see and to foresee the manner in which related quantities affect each other.

To attain what has been suggested, the teacher should have in mind constantly not any definition to be recited by the pupil, not any automatic response to a given cue, not any memory exercise at all, but rather a determination not to pass any instance in which one quantity is related to another, or in which one quantity is determined by one or more others, without calling attention to the fact, and trying to have the student "see how it works." These instances occur in literally thousands of cases in both algebra and geometry. It is the purpose of this chapter to outline in some detail a few typical instances of this character.

RELATIONSHIPS IN ALGEBRA.

The instance of the function idea which usually occurs to one first in algebra is in connection with the study graphs. While this is natural enough, and while it is true that the graph is fundamentally functional in character, the supposition that it furnishes the first opportunity for observing functional relations between quantities betrays a misconception that ought to be corrected.

1. *Use of letters for numbers.*—The very first illustrations given in algebra to show the use of letters in the place of numbers are essentially functional in character. Thus, such relations as $I=prt$ and $A=\pi r^2$, as well as others that are frequently used, are statements of general relationships. These should be used to accustom the student not only to the use of letters in the place of numbers and to the solution of simple numerical problems, but also to the idea, for example, that changes in r affect the value of A. Such questions as the following should be considered: If r is doubled, what will happen to A? If p is doubled, what will happen to I? Appreciation of the meaning of such relationships will tend to clarify the entire subject under consideration. Without such an appreciation it may be doubted whether the student has any real grasp of the matter.

2. *Equations.*—Every simple problem leading to an equation in the first part of algebra would be better understood for just such a discussion as that mentioned above. Thus, if two dozen eggs are weighed in a basket which weighs 2 pounds, and if the total weight is found to be 5 pounds, what is the average weight of an egg? If x is the weight in ounces of one egg, the total weight with the 2-pound basket would be $24x+32$ ounces. If the student will first try the effect of an average weight of 1 ounce, of 1½ ounces, 2 ounces, 2½ ounces, the meaning of the problem will stand out clearly. In

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every such problem preliminary trials really amount to a discussion of the properties of a linear function.

3. *Formulas of pure science and of practical affairs.*—The study of formulas as such, aside from their numerical evaluation, is becoming of more and more importance. The actual uses of algebra are not to be found solely nor even principally in the solution of numerical problems for numerical answers. In such formulas as those for falling bodies, levers, etc., the manner in which changes in one quantity cause (or correspond to) changes in another are of prime importance, and their discussion need cause no difficulty whatever. The formulas under discussion here include those formulas of pure science and of practical affairs which are being introduced more and more into our texts on algebra. Whenever such a formula is encountered the teacher should be sure that the students have some comprehension of the effects of changes in one of the quantities upon the other quantity or quantities in the formula.

As a specific instance of such scientific formulas consider, for example, the force F, in pounds, with which a weight W, in pounds, pulls outward on a string (centrifugal force) if the weight is revolved rapidly at a speed v, in feet per second, at the end of a string of length r feet. This force is given by the formula $F=\frac{Wv^2}{32\,r}$. When such a formula is used the teacher should not be contented with the mere insertion of numerical values for W, v, and r to obtain a numerical value for F.

The advantage obtained from the study of such a formula lies quite as much in the recognition of the behavior of the force when one of the other quantities varies. Thus the student should be able to answer intelligently such questions as the following: If the weight is assumed to be twice as heavy, what is the effect upon the force? If the speed is taken twice as great, what is the effect upon the force? If the radius becomes twice as large, what is the effect upon the force? If the speed is doubled, what change in the weight would result in the same force? Will an increase in the speed cause an increase or a decrease in the force? Will an increase in the radius r cause an increase or a decrease in the force?

As another instance (of a more advanced character) consider the formula for the amount of a sum of money P, at compound interest at r per cent, at the end of n years. This amount may be denoted by A_n. Then we shall have $A_n=P\ (1+r)^n$. Will doubling P result in doubling A_n? Will doubling n result in doubling A_n? Since the compound interest that has accumulated is equal to the difference between P and A_n, will the doubling of r double the interest? Compare the correct answers to these questions with the answers to the similar questions in the case of simple interest, in

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which the formula reads $A_n = P + Prn$ and in which the accumulated interest is simply Prn.

The difference between such a study of the effect produced upon one quantity by changes in another and the mere substitution of numerical values will be apparent from these examples.

4. *Formulas of pure algebra.*—Formulas of pure algebra, such as that for $(x+h)^2$, will be better understood and appreciated if accompanied by a discussion of the manner in which changes in h cause changes in the total result. This can be accomplished by discussing such concrete realities as the error made in computing the area of a square field or of a square room when an error has been made in measuring the side of the square. If x is the true length of the side, and if the student assumes various possible values for the error h made in measuring x, he will have a situation that involves some comprehension of the functional workings of the formula mentioned. The same formula relates to such problems as the change from one entry to the next entry in a table of squares.

A similar situation, and a very important one, occurs with the pure algebraic formula for $(x+a)(y+b)$. This formula may be said to govern the question of the keeping of significant figures in finding the product xy. For if a and b represent the uncertainty in x and y, respectively, the uncertainty in the product is given by this formula. The student has much to learn on this score, for the retention of meaningless figures in a product is one of the commonest mistakes of both student and teacher in computational work.

Such formulas occur throughout algebra, and each of them will be illuminated by such a discussion. The formulas for arithmetic and geometric progression, for example, should be studied from a functional standpoint.

5. *Tables.*—The uses of the functional idea in connection with numerical computation have already been mentioned in connection with the formula for a product. Work which appears on the surface to be wholly numerical may be of a distinctly functional character. Thus any table, e. g., a table of squares, corresponds to or is constructed from a functional relation, e. g., for a table of squares, the relation $y = x^2$. The differences in such a table are the differences caused by changes in the values of the independent variable. Thus, the differences in a table of squares are precisely the differences between x^2 and $(x+h)^2$ for various values of x.

6. *Graphs.*—The functional character of graphical representations was mentioned at the beginning of this section. Every graph is obviously a representation of a functional relationship between two or more quantities. What is needed is only to draw attention to this fact and to study each graph from this standpoint. In addition to this, however, it is desirable to point out that functional

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relations may be studied directly by means of graphs without the intervention of any algebraic formula. Thus such a graph as a population curve, or a curve representing wind pressure, obviously represents a relationship between two quantities, but there is no known formula in either case. The idea that the three concepts, tables, graphs, algebraic formulas, are all representations of the same kind of connection between quantities, and that we may start in some instances with any of the three, is a most valuable addition to the student's mental equipment, and to his control over the quantities with which he will deal in his daily life.

RELATIONSHIPS IN GEOMETRY.

Thus far the instances mentioned have been largely algebraic, though certain mensuration formulas of geometry have been mentioned. While the mensuration formulas may occur to one first as an illustration of functional concepts in geometry, they are by no means the earliest relationships that occur in that study.

1. *Congruence.*—Among the earliest theorems are those on the congruence of triangles. In any such theorem, the parts necessary to establish congruence evidently determine completely the size of each other part. Thus, two sides and the included angle of a triangle evidently determine the length of the third side. If the student clearly grasps this fact, the meaning of this case of congruence will be more vivid to him, and he will be prepared for its important applications in surveying and in trigonometry. Even if he never studies those subjects, he will nevertheless be able to use his understanding of the situation in any practical cases in which the angle between two fixed rods or beams is to be fixed or is to be determined, in a practical situation such as house building. Other congruence theorems throughout geometry may well be treated in a similar manner.

2. *Inequalities.*—In the theorems regarding inequalities, the functional quality is even more pronounced. Thus, if two triangles have two sides of one equal respectively to two sides of the other, but if the included angle between these sides in the one triangle is greater than the corresponding angle in the other, then the third sides of the triangles are unequal in the same sense. This theorem shows that as one angle grows, the side opposite it grows, if the other sides remain unchanged. A full realization of the fact here mentioned would involve a real grasp of the functional relation between the angle and the side opposite it. Thus, if the angle is doubled, will the side opposite it be doubled? Such questions arise in connection with all theorems on inequalities.

3. *Variations in figures.*—A great assistance to the imagination is gained in certain figures by imagining variations of the figure through

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all intermediate stages from one case to another. Thus, the angle between two lines that cut a circle is measured by a proper combination of the two arcs cut out of the circle by the two lines. As the vertex of the angle passes from the center of the circle to the circumference and thence to the outside of the circle, the rule changes, but these changes may be borne in mind, and the entire scheme may be grasped, by imagining a continuous change from the one position to the other, following all the time the changes in the intercepted arcs. The angle between a secant and a tangent is measured in a manner that can best be grasped by another such continuous motion, watching the changes in the measuring arcs as the motion occurs. Such observations are essentially functional in character, for they consist in careful observations of the relationships between the angle to be measured and the arcs that measure it.

4. *Motion.*—The preceding discussion of variable figures leads naturally to a discussion of actual motion. As figures move, either in whole or in part, the relationships between the quantities involved may change. To note these changes is to study the functional relationships between the parts of the figures. Without the functional idea, geometry would be wholly *static.* The study of fixed figures should not be the sole purpose of a course in geometry, for the uses of geometry are not wholly on static figures. Indeed, in all machinery, the geometric figures formed are in continual motion, and the shapes of the figures formed by the moving parts change. The study of motion and of moving forms, the *dynamic* aspects of geometry, should be given at least some consideration. Whenever this is done, the functional relations between the parts become of prime importance. Thus a linkage of the form of a parallelogram can be made more nearly rectangular by making the diagonals more nearly equal, and the linkage becomes a rectangle if the diagonals are made exactly equal. This principle is used in practice in making a rectangular framework precisely true.

5. *Proportionality theorems.*—All theorems which assert that certain quantities are in proportion to certain others, are obviously functional in character. Thus even the simplest theorems on rectangles assert that the area of a rectangle is directly proportional to its height, if the base is fixed. When more serious theorems are reached, such as the theorems on similar triangles, the functional ideas involved are worthy of considerable attention. That this is eminently true will be realized by all to whom trigonometry is familiar, for the trigonometric functions are nothing but the ratios of the sides of right triangles. But even in the field of elementary geometry a clear understanding of the relation between the areas (and volumes) of similar figures and the corresponding linear dimensions is of prime importance.

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RELATIONSHIPS IN TRIGONOMETRY.

The existence of functional relationships in trigonometry is evidenced by the common use of the words "trigonometric functions" to describe the trigonometric ratios. Thus the sine of an angle is a definite ratio, whose value depends upon and is determined by the size of the angle to which it refers. The student should be made conscious of this relationship and he should be asked such questions as the following: Does the sine of an angle increase or decrease as the angle changes from zero to 90°? If the angle is doubled, does the sine of the angle double? If not, is the sine of double the angle more or less than twice the sine of the original angle? How does the value of the sine behave as the angle increases from 90 to 180°? From 180 to 270°? From 270 to 360°? Similar questions may be asked for the cosine and for the tangent of an angle.

Such questions may be reinforced by the use of figures that illustrate the points in question. Thus an angle twice a given angle should be drawn, and its sine should be estimated from the figure. A central angle and an inscribed angle on the same arc may be drawn in any circle. If they have one side in common, the relations between their sines will be more apparent. Finally the relationships that exist may be made vivid by actual comparison of the numerical values found from the trigonometric tables.

Not only in these first functional definitions, however, but in a variety of geometric figures throughout trigonometry do functional relations appear. Thus the law of cosines states a definite relationship between the three sides of a triangle and any one of the angles. How will the angle be affected by increase or decrease of the side opposite it, if the other two sides remain fixed? How will the angle be affected by an increase or a decrease of one of the adjacent sides, if the other two sides remain fixed? Are these statements still true if the angle in question is obtuse?

As another example, the height of a tree, or the height of a building, may be determined by measuring the two angles of elevation from two points on the level plain in a straight line with its base. A formula for the height (h) in terms of these two angles (A, B) and the distance (d) between the points of observation, may be easily written down ($h = d \sin A \sin B / \sin (A-B)$). Then the effect upon the height of changes in one of these angles may be discussed.

In a similar manner, every formula that is given or derived in a course on trigonometry may be discussed with profit from the functional standpoint.

CONCLUSION.

In conclusion, mention should be made of the great rôle which the idea of functions plays in the life of the world about us. Even when no calculation is to be carried out, the problems of real life frequently

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involve the ability to think correctly about the nature of the relationships which exist between related quantities. Specific mention has been made already of this type of problem in connection with interest on money. In everyday affairs, such as the filling out of formulas for fertilizers or for feeds, or for spraying mixtures on the farm, the similar filling out of recipes for cooking (on different scales from that of the book of recipes), or the proper balancing of the ration in the preparation of food, many persons are at a loss on account of their lack of training in thinking about the relations between quantities. Another such instance of very common occurrence in real life is in insurance. Very few men or women attempt intelligently to understand the meaning and the fairness of premiums on life insurance and on other forms of insurance, chiefly because they can not readily grasp the relations of interest and of chance that are involved. These relations are not particularly complicated and they do not involve any great amount of calculation for the comprehension of the meaning and of the fairness of the rates. Mechanics, farmers, merchants, housewives, as well as scientists, and engineers have to do constantly with quantities of things, and the quantities with which they deal are related to other quantities in ways that require clear thinking for maximum efficiency.

One element that should not be neglected is the occurrence of such problems in public questions which must be decided by the votes of the whole people. The tariff, rates of postage and express, freight rates, regulation of insurance rates, income taxes, inheritance taxes, and many other public questions involve relationships between quantities—for example, between the rate of income taxation and the amount of the income—that require habits of functional thinking for intelligent decisions. The training in such habits of thinking is therefore a vital element toward the creation of good citizenship.

It is believed that transfer of training does operate between such topics as those suggested in the body of this paper and those just mentioned, because of the existence of such identical or common elements, whereas the transfer of the training given by courses in mathematics that do not emphasize functional relationships might be questionable.

While this account of the functional character of certain topics in geometry and in algebra makes no claim to being exhaustive, the topics mentioned will suggest others of like character to the thoughtful teacher. It is hoped that sufficient variety has been mentioned to demonstrate the existence of functional ideas throughout elementary algebra and geometry. The committee feels that if this is recognized, algebra and geometry can be given new meaning to many children, and that all students will be better able to control the actual relations which they meet in their own lives.

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Chapter VIII.

TERMS AND SYMBOLS IN ELEMENTARY MATHEMATICS.[1]

A. Limitations imposed by the committee upon its work.—The committee feels that in dealing with this subject it should explicitly recognize certain general limitations, as follows:

1. No attempt should be made to impose the phraseology of any definition, although the committee should state clearly its general views as to the meaning of disputed terms.

2. No effort should be made to change any well-defined current usage unless there is a strong reason for doing so, which reason is supported by the best authority, and, other things being substantially equal, the terms used should be international. This principle excludes the use of all individual efforts at coining new terms except under circumstances of great urgency. The individual opinions of the members, as indeed of any teacher or body of teachers, should have little weight in comparison with general usage if this usage is definite. If an idea has to be expressed so often in elementary mathematics that it becomes necessary to invent a single term or symbol for the purpose, this invention is necessarily the work of an individual; but it is highly desirable, even in this case, that it should receive the sanction of wide use before it is adopted in any system of examinations.

3. On account of the large number of terms and symbols now in use, the recommendations to be made will necessarily be typical rather than exhaustive.

I. GEOMETRY.

B. Undefined terms.—The committee recommends that no attempt be made to define, with any approach to precision, terms whose definitions are not needed as parts of a proof.

Especially is it recommended that no attempt be made to define precisely such terms as *space*, *magnitude*, *point*, *straight line*, *surface*, *plane*, *direction*, *distance*, and *solid*, although the significance of such terms should be made clear by informal explanations and discussions.

C. Definite usage recommended.—It is the opinion of the committee that the following general usage is desirable:

1. *Circle* should be considered as the curve; but where no ambiguity arises, the word "circle" may be used to refer either to the curve or to the part of the plane inclosed by it.

[1] The first draft of this chapter was prepared by a subcommittee consisting of David Eugene Smith [illegible]), W. W. Hart, H. E. Hawkes, E. R. Hedrick, and H. E. Slaught. It was revised by the national [illegible] at its meeting December 29 and 30, 1920.

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2. *Polygon* (including *triangle*, *square*, *parallelogram*, and the like) should be considered, by analogy to a circle, as a closed broken line; but where no ambiguity arises, the word polygon may be used to refer either to the broken line or to the part of the plane inclosed by it. Similarly, *segment of a circle* should be defined as the figure formed by a chord and either of its arcs.

3. *Area of a circle* should be defined as the area (numerical measure) of the portion of the plane inclosed by the circle. *Area of a polygon* should be treated in the same way.

4. *Solids.* The usage above recommended with respect to plane figures is also recommended with respect to solids. For example, *sphere* should be regarded as a surface, its volume should be defined in a manner similar to the area of a circle, and the double use of the word should be allowed where no ambiguity arises. A similar usage should obtain with respect to such terms as *polyhedron*, *cone*, and *cylinder*.

5. *Circumference* should be considered as the length (numerical measure) of the circle (line). Similarly, *perimeter* should be defined as the length of the broken line which forms a polygon; that is, as the sum of the lengths of the sides.

6. *Obtuse angle* should be defined as an angle greater than a right angle and less than a straight angle, and should therefore not be defined merely as an angle greater than a right angle.

7. The term *right triangle* should be preferred to "right-angled triangle," this usage being now so standardized in this country that it may properly be continued in spite of the fact that it is not international. Similarly for *acute triangle*, *obtuse triangle*, and *oblique triangle*.

8. Such English plurals as *formulas* and *polyhedrons* should be used in place of the Latin and Greek plurals. Such unnecessary Latin abbreviations as *Q. E. D.* and *Q. E. F.* should be dropped.

9. The definitions of *axiom* and *postulate* vary so much that the committee does not undertake to distinguish between them.

D. Terms made general.—It is the recommendation of the committee that the modern tendency of having terms made as general as possible should be followed. For example:

1. *Isosceles triangle* should be defined as a triangle having two equal sides. There should be no limitation to two and only two equal sides.

2. *Rectangle* should be considered as including a square as a special case.

3. *Parallelogram* should be considered as including a rectangle, and hence a square, as a special case.

4. *Segment* should be used to designate the part of a straight line included between two of its points as well as the figure formed by an

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arc of a circle and its chord, this being the usage generally recognized by modern writers.

E. Terms to be abandoned.—It is the opinion of the committee that the following terms are not of enough consequence in elementary mathematics at the present time to make their recognition desirable in examinations, and that they serve chiefly to increase the technical vocabulary to the point of being burdensome and unnecessary:

1. *Antecedent* and *consequent.*

2. *Third proportional* and *fourth proportional.*

3. *Equivalent.* An unnecessary substitute for the more precise expressions "equal in area" and "equal in volume," or (where no confusion is likely to arise) for the single word "equal."

4. *Trapezium.*

5. *Scholium, lemma, oblong, scalene triangle, sect, perigon, rhomboid* (the term "oblique parallelogram" being sufficient), and *reflex angle* (in elementary geometry).

6. Terms like *flat angle, whole angle,* and *conjugate angle* are not of enough value in an elementary course to make it desirable to recommend them.

7. *Subtend,* a word which has no longer any etymological meaning to most students and teachers of geometry. While its use will naturally continue for some time to come, teachers may safely incline to such forms as the following: "In the same circle equal arcs *have* equal chords."

8. *Homologous,* the less technical term "corresponding" being preferable.

9. Guided by principle A2 and its interpretation, the committee advises against the use of such terms as the following: *Angle-bisector, angle-sum, consecutive interior angles, supplementary consecutive exterior angles, quader* (for rectangular solid), *sect, explement, transverse angles.*

10. It is unfortunate that it still seems to be necessary to use such a term as *parallelepiped,* but we seem to have no satisfactory substitute. For rectangular parallelepiped, however, the use of *rectangular solid* is recommended. If the terms were more generally used in elementary geometry it would be desirable to consider carefully whether better ones could not be found for the purposes than *isoperimetric, apothem, icosahedron,* and *dodecahedron.*

F. Symbols in elementary geometry.—It should be recognized that a symbol like $\perp$ is merely a piece of shorthand designed to afford an easy grasp of a written or printed statement. Many teachers and a few writers make an extreme use of symbols, coining new ones to meet their own views as to usefulness, and this practice is

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naturally open to objection.[2] There are, however, certain symbols that are international and certain others of which the meaning is at once apparent and which are sufficiently useful and generally enough recognized to be recommended.

For example, the symbols for triangle, $\triangle$, and circle, $\odot$, are international, although used more extensively in the United States than in other countries. Their use, with their customary plurals, is recommended.

The symbol $\perp$, generally read as representing the single word "perpendicular" but sometimes as standing for the phrase "is perpendicular to," is fairly international and the meaning is apparent. Its use is therefore recommended. On account of such a phrase as "the $\perp AB$," the first of the above readings is likely to be the more widely used, but in either case there is no chance for confusion.

The symbol $\parallel$ for "parallel" or "is parallel to" is fairly international and is recommended.

The symbol $\sim$ for "similar" or "is similar to" is international and is recommended.

The symbols $\cong$ and $\equiv$ for "congruent" or "is congruent to" both have a considerable use in this country. The committee feels that the former, which is fairly international, is to be preferred because it is the more distinctive and suggestive.

The symbol $\angle$ for "angle" is, because of its simplicity, coming to be generally preferred to any other and is therefore recommended.

Since the following terms are not used frequently enough to render special symbols of any particular value, the world has not developed any that have general acceptance, and there seems to be no necessity for making the attempt: Square, rectangle, parallelogram, trapezoid, quadrilateral, semicircle.

The symbol $\overset{\frown}{AB}$ for "arc AB" can not be called international. While the value of the symbol $\frown$ in place of the short word *arc* is doubtful, the committee sees no objection to its use.

The symbol $\therefore$ for "therefore" has a value that is generally recognized, but the symbol $\because$ for "since" is used so seldom that it should be abandoned.

With respect to the lettering of figures, the committee calls attention for purposes of general information to a convenient method, found in certain European and in some American textbooks, of lettering triangles: Capitals represent the vertices, corresponding small letters represent opposite sides, corresponding small Greek letters represent angles, and the primed letters represent the corresponding parts of a congruent or similar triangle. This permits of

[2] This is not intended to discourage the use of algebraic methods in the solution of such geometric problems as lend themselves readily to algebraic treatment.

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speaking of α (alpha) instead of "angle A," and of "small a" instead of BC. The plan is by no means international with respect to the Greek letters. The committee is prepared, however, to recommend it with the optional use of the Greek forms.

In general, it is recommended that a single letter be used to designate any geometric magnitude, whenever there is no danger of ambiguity. The use of numbers alone to designate magnitudes should be avoided by the use of such forms A_1, A_2, ...

With respect to the symbolism for limits, the committee calls attention to the fact that the symbol $\doteq$ is a local one, and that the symbol $\rightarrow$ (for "tends to") is both international and expressive and has constantly grown in favor in recent years. Although the subject of limits is not generally treated scientifically in the secondary school, the idea is mentioned in geometry and a symbol may occasionally be needed.

While the teacher should be allowed freedom in the matter, the committee feels that it is desirable to discourage the use of such purely local symbols as the following:

$\doteq$ for "equal in degrees,"

ass for "two sides and an angle adjacent to one of them," and

sas for "two sides and the included angle."

G. Terms not standardized.—At the present time there is not sufficient agreement upon which to base recommendations as to the use of the term *ray* and as to the value of terms like *coplanar*, *collinear*, and *concurrent* in elementary work. Many terms, similar to these, will gradually become standardized or else will naturally drop out of use.

II. ALGEBRA AND ARITHMETIC.

H. Terms in algebra.—1. With respect to equations the committee calls attention to the fact that the classification according to degree is comparatively recent and that this probably accounts for the fact that the terminology is so unsettled. The Anglo-American custom of designating an equation of the first degree as a *simple equation* has never been satisfactory, because the term has no real significance. The most nearly international terms are *equation of the first degree* (or "first degree equation") and *linear equation*. The latter is so brief and suggestive that it should be generally adopted.

2. The term *quadratic equation* (for which the longer term "second degree equation" is an unnecessary synonym, although occasionally a convenient one) is well established. The terms *pure quadratic* and *affected quadratic* signify nothing to the pupil except as he learns the meaning from a book, and the committee recommends that they be dropped. Terms more nearly in general use are *complete quadratic* and *incomplete quadratic*. The committee feels, however, that the

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distinction thus denoted is not of much importance and believes that it can well be dispensed with in elementary instruction.

3. As to other special terms, the committee recommends abandoning, so far as possible, the use of the following: *Aggregation* for grouping; *vinculum* for bar; *evolution* for finding roots, as a general topic; *involution* for finding powers; *extract* for find (a root); *absolute term* for constant term; *multiply an equation, clear of fractions, cancel* and *transpose*, at least until the significance of the terms is entirely clear; *aliquot part* (except in commercial work).

4. The committee also advises the use of either *system of equations* or *set of equations* instead of "simultaneous equations," in such an expression as "solve the following set of equations," in view of the fact that at present no well established definite meaning attaches to the term "simultaneous."

5. The term *simplify* should not be used in cases where there is possibility of misunderstanding. For purposes of computation, for example, the form $\sqrt{8}$ may be simpler than the form $2\sqrt{2}$, and in some cases it may be better to express $\sqrt{\frac{3}{4}}$ as $\sqrt{0.75}$ instead of $\frac{1}{2}\sqrt{3}$. In such cases, it is better to give more explicit instructions than to use the misleading term "simplify."

6. The committee regrets the general uncertainty in the use of the word *surd*, but it sees no reasonable chance at present of replacing it by a more definite term. It recognizes the difficulty generally met by young pupils in distinguishing between *coefficient* and *exponent*, but it feels that it is undesirable to attempt to change terms which have come to have a standardized meaning and which are reasonably simple. These considerations will probably lead to the retention of such terms as *rationalize, extraneous root, characteristic*, and *mantissa*, although in the case of the last two terms "integral part" and "fractional part" (of a logarithm) would seem to be desirable substitutes.

7. While recognizing the motive that has prompted a few teachers to speak of "positive x" instead of "plus x," and "negative y" instead of "minus y," the committee feels that attempts to change general usage should not be made when based upon trivial grounds and when not sanctioned by mathematicians generally.

I. Symbols in algebra.—The symbols in elementary algebra are now so well standardized as to require but few comments in a report of this kind. The committee feels that it is desirable, however, to call attention to the following details:

1. Owing to the frequent use of the letter x, it is preferable to use the center dot (a raised period) for multiplication in the few cases in which any symbol is necessary. For example, in a case like $1 \cdot 2 \cdot 3 \cdots (x-1) \cdot x$, the center dot is preferable to the symbol $\times$; but

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in cases like $2a(x-a)$ no symbol is necessary. The committee recognizes that the period (as in $a.b$) is more nearly international than the center dot (as in $a \cdot b$); but inasmuch as the period will continue to be used in this country as a decimal point, it is likely to cause confusion, to elementary pupils at least, to attempt to use it as a symbol for multiplication.

2. With respect to division, the symbol $\div$ is purely Anglo-American, the symbol : serving in most countries for division as well as ratio. Since neither symbol plays any part in business life, it seems proper to consider only the needs of algebra, and to make more use of the fractional form and (where the meaning is clear) of the symbol /, and to drop the symbol $\div$ in writing algebraic expressions.

3. With respect to the distinction between the use of $+$ and $-$ as symbols of operation and as symbols of direction, the committee sees no reason for attempting to use smaller signs for the latter purpose, such an attempt never having received international recognition, and the need of two sets of symbols not being sufficient to warrant violating international usage and burdening the pupil with this additional symbolism.

4. With respect to the distinction between the symbols $\equiv$ and $=$ as representing respectively identity and equality, the committee calls attention to the fact that, while the distinction is generally recognized, the consistent use of the symbols is rarely seen in practice. The committee recommends that the symbol $\equiv$ be not employed in examinations for the purpose of indicating identity. The teacher, however, should use both symbols if desired.

5. With respect to the root sign, $\sqrt{\ }$, the committee recognizes that convenience of writing assures its continued use in many cases instead of the fractional exponent. It is recommended, however, that in algebraic work involving complicated cases the fractional exponent be preferred. Attention is also called to the fact that the convention is quite generally accepted that the symbol $\sqrt{a}$ (a representing a positive number) means only the positive square root and that the symbol $\sqrt[n]{a}$ means only the principal nth root, and similarly for $a^{\frac{1}{2}}$, $a^{\frac{1}{n}}$. The reason for this convention is apparent when we come to consider the value of $\sqrt{4}+\sqrt{9}+\sqrt{16}+\sqrt{25}$. This convention being agreed to, it is improper to write $x=\sqrt{4}$, as the complete solution of $x^2-4=0$, but the result should appear as $x=\pm\sqrt{4}$. Similarly, it is not in accord with the convention to write $\sqrt{4}=\pm 2$, the conventional form being $\pm\sqrt{4}=\pm 2$; and for the same reason it is impossible to have $\sqrt{(-1)^2}=-1$, since the symbol refers only to a positive root. These distinctions are not matters to be settled by the individual opinion of a teacher or a local group of

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teachers; they are purely matters of convention as to notation, and the committee simply sets forth, for the benefit of the teachers, this statement as to what the convention seems to be among the leading writers of the world at the present time.

When imaginaries are used, the symbol i should be employed instead of $\sqrt{-1}$ except possibly in the first presentation of the subject.

7. As to the factorial symbols 5! and $\underline{|5}$, to represent $5 \cdot 4 \cdot 3 \cdot 2 \cdot 1$, the tendency is very general to abandon the second one, probably on account of the difficulty of printing it, and the committee so recommends. This question is not, however, of much importance in the general courses in the high school.

8. With respect to symbols for an unknown quantity there has been a noteworthy change within a few years. While the Cartesian use of x and y will doubtless continue for two general unknowns, the recognition that the formula is, in the broad use of the term, a central feature of algebra has led to the extended use of the initial letter. This is simply illustrated in the direction to solve for r the equation $A = \pi r^2$. This custom is now international and should be fully recognized in the schools.

9. The committee advises abandoning the double colon(: :) in proportion, and the symbol $\propto$ in variation, both of these symbols being now practically obsolete.

J. Terms and symbols in arithmetic.—1. While it is rarely wise to attempt to abandon suddenly the use of words that are well established in our language, the committee feels called upon to express regret that we still require very young pupils, often in the primary grades, to use such terms as *subtrahend*, *addend*, *minuend* and *multiplicand*. Teachers themselves rarely understand the real significance of these words, nor do they recognize that they are comparatively modern additions to what used to be a much simpler vocabularly in arithmetic. The committee recommends that such terms be used, if at all, only after the sixth grade.

2. Owing to the uncertainty attached to such expressions as "to three decimal places," "to thousandths," "correct to three decimal places," "correct to the nearest thousandth," the following usage is recommended: When used to specify accuracy in computation, the four expressions should be regarded as identical. The expression "to three decimal places" or "to thousandths" may be used in giving directions as to the extent of a computation. It then refers to a result carried only to thousandths, without considering the figure of ten-thousandths; but it should be avoided as far as possible because it is open to misunderstanding. As to the term, "significant figure," it should be noted that 0 is always significant

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except when used before a decimal fraction to indicate the absence of integers or, in general, when used merely to locate the decimal point. For example, the zeros underscored in the following are "significant," while the others are not: 0.5, 9.50, 102, 30,200. Further, the number 2396, if expressed correct to three significant figures, would be written 2400.[3] It should be noted that the context or the way in which a number has been obtained is sometimes the determining factor as to the significance of a 0.

3. The pupil in arithmetic needs to see the work in the form in which he will use it in practical life outside the schoolroom. His visualization of the process should therefore not include such symbols as +, −, ×, ÷, which are helpful only in writing out the analysis of a problem or in the printed statement of the operation to be performed. Because of these facts the committee recommends that only slight use be made of these symbols in the written work of the pupil, except in the analysis of problems. It recognizes, however, the value of such symbols in printed directions and in these analyses.

III. GENERAL OBSERVATIONS AND RECOMMENDATIONS.

K. General observations.—The committee desires also to record its belief in two or three general observations.

1. It is very desirable to bring mathematical writing into closer touch with good usage in English writing in general. That we have failed in this particular has been the subject of frequent comment by teachers of mathematics as well as by teachers of English. This is all the more unfortunate because mathematics may be and should be a genuine help toward the acquisition of good habits in the speaking and writing of English. Under present conditions, with a style that is often stilted and in which undue compression is evident, we do not offer to the student the good models of English writing of which mathematics is capable, nor indeed do we always offer good models of thought processes. It is to be feared that many teachers encourage the use of a kind of vulgar mathematical slang when they allow such words as "tan" and "cos," for tangent and cosine, and habitually call their subject by the title "math."

2. In the same general spirit the committee wishes to observe that teachers of mathematics and writers of textbooks seem often to have gone to an extreme in searching for technical terms and for new symbols. The committee expresses the hope that mathematics may retain, as far as possible, a literary flavor. It seems perfectly feasible that a printed discussion should strike the pupil as an expression of reasonable ideas in terms of reasonable English forms. The fewer technical terms we introduce, the less is the subject likely to give

[3] The underscoring of significant zeros is here used merely to make clear the committee's meaning. The device is not recommended for general adoption.

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the impression of being difficult and a mere juggling of words and symbols.

3. While recognizing the claims of euphony, the fact that a word like "historic" has a different meaning from "historical" and that confusion may occasionally arise if "arithmetic" is used as an adjective with a different pronunciation from the noun, the committee advises that such forms as geometric be preferred to geometrical. This is already done in such terms as analytic geometry and elliptic functions, and it seems proper to extend the custom to include *arithmetic, geometric, graphic,* and the like.

L. General recommendations.—In view of the desirability of a simplification of terms used in elementary instruction, and of establishing international usage so far as is reasonable, the committee recommends that the subject of this report be considered by a committee to be appointed by Section IV of the next International Congress of Mathematicians, such committee to contain representatives of at least the recognized international languages admitted to the meetings.

2. The committee suggests that examining bodies, contributors to mathematical journals, and authors of textbooks endeavor to follow the general principles formulated in this report.

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SYNOPSIS OF THE REMAINING CHAPTERS OF THE COMPLETE REPORT.

CHAPTER IX.—THE PRESENT STATUS OF DISCIPLINARY VALUES IN EDUCATION. By Vevia Blair.

A critical survey of the scientific literature relating to disciplinary values and the transfer of training, followed by an attempt to formulate conclusions warranted by the results of investigations and supported by leading educational psychologists.

CHAPTER X.—A CRITICAL STUDY OF THE CORRELATION METHOD APPLIED TO GRADES. By A. R. Crathorne.

An investigation to determine the serviceability and reliability in educational problems of the theory of correlation applied to grades. The chapter begins with a nontechnical description of the theory of correlation. This is followed by an attempt to formulate a scale of values for the correlation coefficient with a view of determining with as much precision as possible what constitutes "high," "medium," or "low" correlation. Finally the theory is applied to all the studies in the high-school curriculum—with some significant results as to the educational influence of certain groups of subjects as compared with other groups.

CHAPTER XI.—MATHEMATICAL CURRICULA IN FOREIGN COUNTRIES. By J. C. Brown.

A brief account of the work in mathematics offered by the elementary and secondary schools of Austria, Belgium, Denmark, France, Germany, Holland, Hungary, Italy, Japan, Roumania, Russia, Sweden, and Switzerland, followed by a general summary comparing conditions in the United States with those in the countries mentioned.

CHAPTER XII.—EXPERIMENTAL COURSES IN MATHEMATICS. By Raleigh Schorling.

An extensive description of the work in mathematics given in 14 leading experimental schools of this country—giving in detail the order of topics and the time devoted to each, the equipment of the schools, the cost of the instruction, etc.

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CHAPTER XIII.—STANDARDIZED TESTS IN MATHEMATICS FOR SECONDARY SCHOOLS. By C. B. Upton.

A description of various standard tests in arithmetic, algebra, and geometry, and a discussion of their use in the teaching of mathematics. The tests considered are the following: The Courtis arithmetic tests, the Woody arithmetic scales, the Woody-McCall arithmetic test, the Stone reasoning tests, the Courtis standard practice tests in arithmetic, the Studebaker practice exercises in arithmetic, the Rugg-Clark practice exercises in first-year algebra, the Hotz first-year algebra scales, the Kelly mathematical values test, the Minnick geometry tests, the Rogers prognostic tests of mathematical ability, and others.

CHAPTER XIV.—THE TRAINING OF TEACHERS OF MATHEMATICS. By R. C. Archibald.

A selection from the results of an extended and detailed investigation, covering every State in the Union and all the larger cities, concerning present conditions regarding the training of teachers of mathematics, the facilities for providing such training, and the requirements for certification. The selection is made for the purpose of exhibiting the highest standards to be found in various parts of the country and the courses of study for the training of teachers given in various institutions. The chapter also includes a brief survey of conditions in certain foreign countries.

CHAPTER XV.—CERTAIN QUESTIONNAIRE INVESTIGATIONS. By W. F. Downey, A. R. Crathorne, Alfred Davis, and others.

These investigations relate to the interests of high-school pupils, change of mind as to life work between high school and college, the importance of mathematics, etc.

CHAPTER XVI.—BIBLIOGRAPHY ON THE TEACHING OF MATHEMATICS. By D. E. Smith and J. A. Foberg.

This bibliography lists all the articles relating to mathematics that have appeared since 1910 in a number of leading educational periodicals, and gives in addition to author, title, and place of publication a brief summary of each article.

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DEPARTMENT OF THE INTERIOR
U. S. BUREAU OF EDUCATION

BULLETIN, 1921, No. 33

MUSIC DEPARTMENTS OF LIBRARIES

By

A COMMITTEE OF THE MUSIC TEACHERS' NATIONAL ASSOCIATION

WASHINGTON
GOVERNMENT PRINTING OFFICE
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MUSIC DEPARTMENTS OF LIBRARIES.

INTRODUCTION.

The Music Teachers' National Association committee on the history of music and libraries presents herewith the summaries of the questionnaire prepared by the committee and sent out by the Bureau of Education in 1917–18. This is the first statement to show the condition and resources of the music sections of public and school libraries, containing 5,000 volumes or over, throughout the United States. The result is both encouraging and discouraging. It is encouraging in that the report shows a fairly wide dissemination of considerable music libraries throughout the country, with some collections of first rank. It is encouraging for the reason that many more libraries report increasing interest in the music departments, in comparison to the number where music interest is stationary or decreasing. It is encouraging because many of the librarians who report small collections are careful to note that the reason therefor is recent installation of the section, perhaps even the youth of the library itself, or lack of room or of other facilities.

The discouraging feature is the lack of interest shown, though not more frequently than might be expected, by librarians, music teachers, and music lovers. One of the prime objects of the committee is to deal with this matter, and now that the information has been collated prompt steps will be taken.

The Music Teachers' National Association committee was appointed by the then president, Mr. J. Lawrence Erb, in 1916. As a preliminary to the later activity Mr. O. G. Sonneck, at the time chief of the music division of the Library of Congress, in Washington, read a paper at the annual meeting in New York on the "History of Music in America—A Few Suggestions," reprinted in the association's Proceedings for 1916, pages 50–68; and he contributed to The Art World (1917, June, pp. 242–244) an article, "Music in Our Libraries," which has such a direct bearing on the subject of this report that parts of it are reprinted in these pages as an appendix. In the months succeeding Mr. Sonneck prepared a questionnaire, which was sent out by the Bureau of Education to 2,849 libraries.

The answers to this questionnaire are summarized in the following pages, with such comment as seems appropriate for certain special cases. This stage of the committee's work now being complete, it remains to progress along other lines, such as an investigation of the large private music collections, and efforts to promote the larger encouragement of music sections by both libraries and their musical patronage. To this end suggestive lists of desirable books and music may be prepared and made available for interested parties.

Even a casual inspection of the reports received from the libraries indicates two important matters. If the collection of music or books on music is small and inadequate, patronage is almost invariably small. A number of librarians realize and mention this fact in their reports. A music section to which additions are constantly being made seldom fails to bring patronage in gratifying proportion to the accessions of musical material. The second outstanding fact

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is that a librarian who is patently uninterested in a music section, even from a nonpartisan viewpoint, as some reports unfortunately indicate, can scarcely be expected to be an asset to the community. The libraries, large or small, that promote music in at least a fair and impartial way thus serve a considerable part of any community in a very special sense, and one that can react most desirably upon the library itself. On the other hand, there is an abundant opportunity for music teachers, students, and others to make larger use of the libraries and to encourage the library authorities to develop the music section facilities.

Some of the interesting features of the reports are detailed in the following account, and the committee hopes that the information thus collated will be of value to librarians and others. Many librarians have included in their reports mention of certain departments or activities that have met with popular approval. Some librarians, particularly in the Eastern States, seem rather shocked at the mention of player-piano rolls and phonograph records as library propositions, while other librarians are anxious to install or add to such collections. Some excellent finding lists, large and small, and some very attractive bulletins have been sent as evidence of interest in certain libraries; these are duly mentioned. It is hoped that the index of special features will be of particular use to librarians and serious music students.

WILLIAM BENBOW, *Chairman.*
WALDO S. PRATT.
O. G. SONNECK.
J. LAWRENCE ERB.
CHARLES N. BOYD.

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REPORTS FROM LIBRARIES.

ALABAMA.

Reports have been received from seven libraries, six of which have less than 100 volumes on music, and the seventh 225 volumes. One has 51 bound volumes of music, one 1,543, and one 2,000 separate pieces. One has 18 scores. One library is now spending $80 annually on its music purchases, from a special fund, and another has an appropriation of $5. Two report increasing interest and one decreasing interest in music. Two libraries would increase the music section, and one believes it sufficient for the needs of the situation. One has a piano in the library.

The *Public Library at Birmingham* has only recently instituted a music section. It has 225 books on music, 51 bound volumes of music, and 1,543 separate pieces, in manila covers. It also has 382 player-piano rolls for circulation. Interest is reported increasing, and it is hoped that much more may be done with music in the future.

ARIZONA.

Of the four libraries reporting music, one has 25 volumes, two 100 each, and one 200. One has 100 bound volumes of music, one 175, and one 1,000 separate pieces of music. No special interest is indicated, either on the part of libraries or the public, and only one library reports a desire for an increased music collection.

ARKANSAS.

Music activity in Arkansas libraries seems to be largely represented by that department of the *University of Arkansas*, at Fayetteville. This institution has made a speciality of providing programs of phonograph records, each program accompanied by a nontechnical "talk," with copious notes and pictures. These programs, covering a wide range of music, are intended for communities otherwise deprived of music, and are used by clubs and schools all over the State. The programs and illustrative remarks have been largely used outside the State and are furnished upon request. By keeping the material in rapid circulation, this plan is accomplished with a supply of 300 records. A State appropriation provides annually $300 for music, $75 for books on music, and $100 for records. Interest is increasing, and the present collection of 25 books, 100 bound volumes, and 100 separate pieces of sheet music in the library is entirely inadequate for the demand.

Part songs and chorus works are furnished other schools in the State, and an active propaganda is conducted by means of lectures and recitals, in addition to the above plan.

The only other library reporting music from Arkansas has a collection of 25 volumes on music, and evidently slight interest.

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CALIFORNIA.

Items reported.	Number of libraries reporting—								
	1–100	125–450	500–1,000	1,100–1,500	2,000 and over.	Not over $100.	$135–$200	$250–$500	Over $500.
Books on music	20	16	3	2	1				
Bound volumes of music	10	5	7	1	2				
Separate pieces	1		11		2				
Phonograph records	6	2							
Scores	11	1							
Chamber music	5	1							
Acquisition cost						2		3	4
Annual expense for—									
Music						8	2	2	
Books on music						8		1	1
Rolls and records						2	1		
Library fund appropriation						1	2		
Ideal appropriation						4	3	6	1

The music sections of the 45 California libraries reporting indicate unusual interest in and attention to the subject. Eight persons devote their entire time as music librarians, while 22 others give their time largely, in addition to the customary help of the library staff. Orchestral scores and chamber music are found in an unusual number of libraries. The policy of the libraries seems to be influenced about equally by public request and institutional character. Gifts of library material are proportionately rare, and most of the acquisitions are by purchase, under expert guidance. Four libraries report opportunities for serious musical study; 21 libraries use special bulletins, newspaper, and other publicity; 8 report an annual appropriation for music department use, amount not specified. Other annual expenses are tabulated herewith. Seventeen libraries report increasing interest in music, four stationary interest, and one decreased interest since the war. Sixteen libraries favor additional outlay for music and books, believing the present supply inadequate, while four libraries would add player rolls or records. In 11 cases this is dictated by patrons' wishes, and in five cases by library policy. Pianos are available in three libraries and phonographs in four. Fifteen libraries have an interlibrary loan system for music, and two furnish "traveling" libraries. Two have lectures (in one case weekly), and both libraries pay for these lectures or recitals.

The *Los Angeles City School Library* makes a specialty of music and musical literature for public-school use and issues a list of book helps in biography, opera stories, and kindergarten songs and games; 2,500 teachers draw steadily upon this collection, which has an annual appropriation of $200 for books on music, records, etc. The aim is to supplement the classroom work in music; to this end the records and material are very thoroughly classified and listed in every school building.[1] The plan is regarded as very successful and satisfactory.

The *Los Angeles Public Library* has 2,388 books on music in its main library and branches, with 3,537 bound volumes of music. The object has been to acquire a well-balanced collection, without specialties. No record is kept of users of the books on music, but 23,833 scores were loaned last year. The allowance this year is $300 for music and $100 for books on music.

The *Los Angeles Public Library* has made an innovation by advertising in a local music magazine, the advertisements being cleverly written and inviting. The monthly bulletin for December, 1914, describes the plans and operations of the music department, with a considerable list of recent additions. The soundproof music room, with player pianos, may be used regularly by clubs according

[1] A long list of phonograph records is ready in mimeographed form.

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to appointment. Local musical affairs are bulletined in advance, with mention of material in the library. The quarterly bulletin for October, 1916, prints a carefully selected list of books about music.

The *Oakland Free Library*, with 325 volumes on music and 950 bound volumes of music, has also about 7,500 copies of anthems and cantatas, which are circulated to church choirs. For the year closing June 30, 1917, 76 churches took 1,357 titles and 24,331 copies under this unique arrangement. A separate booklet gives the contents and rules for borrowing material from this collection, known as the Vesper Collection of Church Music, from its founder, Mr. O. M. Vesper. A 39-page list of this music was published in 1914.

The *Chaffey Library*, at Ontario, has 120 books on music, 125 bound volumes of music, and 100 records, evidently well chosen. A special bulletin of this material is published to stimulate high school and general interest in this department.

The *Pasadena Public Library* has 1,000 volumes on music and 980 volumes of bound music. Special attention has been paid to the collection of piano music and operas. The library reports music as one of its most popular departments.

The *Pomona Public Library* tried the experiment of giving each music teacher in the vicinity a list of musical works and offered to keep these lists up to date, but none have ever been returned for this purpose.

The *A. K. Smiley Public Library*, at Redlands, has 350 books on music and 600 bound volumes of music, particularly strong in vocal scores of operas; 70 chamber music works are represented. There is an annual appropriation of $50 from the library funds for the music department. An 8-page catalogue of the musical material was published in December, 1913.

The *California State Library*, at Sacramento, supplements all the other libraries of the State. To this end it is desired to build up a fine collection of scores, records, and player rolls, as well as musical literature, and to loan this through the other libraries. As yet the musical collections are not large, but plans for a new State library building include a music room, and by the time the building is ready it is hoped the collection will be available. Two pamphlets published by the library explain the county free library system now in use in California.

The music alcove in the *San Diego Public Library* is practically a new undertaking, though it contains 1,500 books. The bound volumes of piano music are arranged according to periods and nationalities. There are also special collections of folk song and church music. Annually $100 is taken from the book fund for music purchases; 2,000 persons now use the music collection annually, and the interest is increasing. The library notes the use of the music collection by music teachers and appreciate their requests and helpful suggestions.

The *San Diego High School Library* and school authorities believe in stimulating intelligent musical appreciation on the part of every student, and emphasize the cultural rather than the technical work. The high school has an elaborate four-year course in musical history, and after the first year the study is largely by assigned reference reading instead of textbooks. The library of 250 books on music and 400 records is largely selected in accord with this plan, and is patronized by an average of 25 scholars for every day in the school year. There is a liberal appropriation for books and records; music is not purchased for the library.

The *San Francisco Public Library* has a music room, with an adjoining sound-proof piano room. Two attendants devote all their time to the music collection, which includes 1,500 books on music, 2,124 bound volumes of music,

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and 2,000 unbound pieces. About 35 per cent of the music books are in German or Italian. The collection is strong in piano music and vocal and instrumental scores of operas. There are 100 orchestral scores, and about 100 chamber music works. The library has a valuable collection of Spanish music, and many early and rare editions. About $500 is spent annually on music, and about $600 on books on music. In 1915–16, 6,969 borrowers used the music collection, and the following year this number increased to 9,259, no count being kept of renders who do not take books out. The use of the music department, as compared with the entire library, was 2.84 per cent for 1915–16 and 3.46 per cent for 1916–17. There are weekly lectures, as a university extension course, under the auspices of the University of California. The department is brought into touch with all musical events in the city. Programs are obtained in advance and filed, musical magazines are indexed, and articles of interest to readers of the department are clipped from the daily papers.

COLORADO.

Items reported.	Number of libraries reporting—						
	1–99	100–200	250	600	1,350	Not over $100.	$500–$1,000.
Books on music	6	3	2	2	1	.....	.....
Bound volumes of music	3	1	.....	1	.....	.....	.....
Separate pieces of music	1	.....	.....	.....	.....	.....	.....
Acquisition cost	.....	.....	.....	.....	.....	2	2
Annual expense for—							
Music	.....	.....	.....	.....	.....	2	.....
Books on music	.....	.....	.....	.....	.....	3	.....
Library fund appropriation	.....	.....	.....	.....	.....	3	.....
Ideal appropriation	.....	.....	.....	.....	.....	2	1

Of the 14 Colorado libraries reporting music sections, there is but 1 of considerable size. Three report stationary interest and two increasing interest. Five libraries are willing to add to the list of books on music and three to the supply of music. Player pianos and phonographs seem to have no place in Colorado libraries.

The *Public Library of Denver* has a collection of 1,348 volumes in the music department. It has a few orchestral scores and chamber music works, but regards the collection as strongest in books on music, song, piano, and violin collections; also opera and oratorio stories. A Denver music society provides a special fund from which purchases are made. Unfortunately no provision was made in the library building for a sound-proof music room; and as the musicians seem to prefer personal ownership of music, the library patronage drifts mainly toward books on music. All the song collections are indexed, and this index is perhaps the music department's most valuable asset. As yet the index is not available in printed form.

CONNECTICUT.

Items reported.	Number of libraries reporting—							
	1–49	50–200	200–699	700–1,000	1,800	2,200	3,000	3,500
Books on music	25	14	5	2	.....	1	.....	.....
Bound volumes of music	5	10	.....	2	1	.....	1	.....
Separate pieces	1	3	1	1	.....	.....	.....	1
Phonograph records and player rolls	(1)	(1)	.....	.....	.....	.....	.....	.....
Scores	4	1	1	.....	.....	.....	.....	.....
Chamber music	3	1	.....	.....	.....	.....	.....	.....

[1] None reported.

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As will be noted in the accompanying table, neither the size of the music sections nor their appropriations are apt to be large in this State. Only 4 libraries report an increasing interest in music, 8 are stationary, and 34 make no observation in this respect. Seven libraries would add to the present collection of music, 6 to the books on music; the others are noncommittal. In the matter of ideal annual appropriation, one library favors $25, one $50 to $75, one $100, and one $500.

The *Hartford Public Library*, at Hartford, has 500 books on music, about 3,000 volumes of music, and some 30 each of orchestral and chamber music scores. Vocal scores of operas, songs, piano music, four-hand arrangements of orchestral works, and folk songs are well represented. Local concert programs are posted on the music room bulletin board. About $125 is spent annually for music and $25 for books on music. The average number of actual users of the music collection is about 2,000 yearly, and the demand for music is 75 per cent, as compared with 25 per cent for books on music. Therefore the library strongly favors the purchase of music in preference to books.

The *New Haven Colony Historical Society*, at New Haven, has a small collection of music books. Daniel Read, one of the earlier American church composers, was a resident of New Haven, and some of his books are in this collection, including one or more manuscript books evidently of his compilation.

The *Free Public Library of New Haven* has 725 books on music and 850 bound volumes of music. The plan of this library is considerably affected by the location in the same city of large musical collections belonging to Yale University and professors in the university music school, all of which are accessible to music students. The resulting policy of the public library is to develop a popular rather than a conservatory collection in its music department, which is planned for general use. The music collection is relatively strong in vocal scores of operas and oratorios and songs. Quarterly bulletins of new accessions are issued in addition to weekly newspaper notices. Of the total music department circulation, 60 per cent is of music and 40 per cent of books on music.

The *Yale School of Religion* owns the church music library of the late Dr. Lowell Mason, containing some 8,000 titles in 700 volumes. As the collection was one of the first of its kind in this country, it is of peculiar interest. At present it is deposited in a room in Wright Hall, but the expectation is to ultimately make the collection accessible to students in the Yale Music School.

The *Yale University Library* has a music room, with one attendant, previously trained in general library work. There are 2,200 books on music and 1,800 bound volumes of music; 40 per cent of the books are German, 6 per cent French, 4 per cent Spanish, Russian, etc. There are 350 orchestral scores and 40 of chamber music. History, folk song, and early American music are the strongest fields, and these offer some attraction for research workers. The amount spent on the library varies greatly from year to year. There is an income of $50 from an endowment fund; perhaps the average annual outlay is $50 for music and $150 for books on music. Interest in the collection is felt to be stationary and not equal to the interest of the community in music; a strongly expressed desire for books or music would be met. The collection is kept fairly up to date in historical, critical, and theoretical works, especially those of modern French and German authors.

DELAWARE.

The only considerable music library reported is that of the *Wilmington Institute. Free Library*, at Wilmington. It has 350 books on music, 473 bound volumes of music, and 1,000 separate pieces of music, and this is considered sufficient to supply the demands of the community.

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DISTRICT OF COLUMBIA.

The outstanding feature of the report from this District is of course the music division of the *Library of Congress*. The functions of this division are, to quote the words of the report, "national, international, and incidentally local. Its ultimate ambition is to make the serious study of music and the literature of music so comprehensively easy for Americans as to obviate the necessity of consulting European libraries except in very special fields of musical erudition. Since the reorganization of the music division in 1902, the principle of organic development has been adhered to consistently, with results best studied from the Annual Reports of the Librarian of Congress, 1903 to 1917, from Mr. Sonneck's articles, and others as follows":

Sonneck, O. G.
"The Music Division of the Library of Congress."
In *Library Journal*, 1915, vol. 40, No. 8, pp. 587–589.
In *New Music Review*, 1910, v. 9, pp. 74–78.
"*Methods, Policies and Resources*," in M. T. N. A. *Proceedings*, 1908, pp. 260–287.
Kinkeldey, Otto.
"American Music Catalogs."
In *Library Journal*, 1915, v. 40, No. 8, pp. 574–578.
Scholes, Percy A.
"A National Storehouse of Knowledge. A Visit to the Music Section of the Library of Congress." In *Music Student*, London, 1916, v. 8, pp. 322–324.

The following statement has been communicated by the Librarian of Congress:

THE MUSIC DIVISION OF THE LIBRARY OF CONGRESS.[1]

The music division was organized in 1897, when the collections consisted almost solely of accumulated copyright deposits. It was an accumulation of music rather than a collection, and certainly did not merit the designation of "musical library." In order to transform it into one worthy of such a name and of the national library at least four steps were necessary. These were (1) a survey and proper organization of the existing collection, (2) the determination of a suitable scheme of classification and of a workable set of cataloging rules, (3) a plan of development that would be systematic, and (4) the application of systematic effort in pursuance of this plan through the acquisition of material. A decision to work along these lines was reached in 1902, and for 15 years was most ably carried out under the direct supervision of Mr. O. G. Sonneck, who was for that period chief of the division.

Before 1902 the chief resources of the music division were the copyright deposits. Consequently until 1902 the collection, generally speaking, represented only the product of the American press, either as original compositions and books on music by Americans or reprints of European publications. The collections embraced in the main musical products of the American press from 1819 on. There were, of course, the several thousand items copyrighted by European music publishers between 1891 and 1902, but this was mostly music by present-day composers. Apart from this there were some old English song collections, a few odds and ends of unknown origin, and a single edition of Beethoven's symphonies.

To-day the music division has good or excellent working collections in practically every field that has so far come within the sphere of concentrated action, as, for instance, cantatas, oratorios, and the like. The collection of about 20,000 librettos is the largest in existence. The published works of new composers who have "arrived" have been collected comprehensively; so that the library has come to be known as the place where a thorough study of the works of new men is likely to be possible.

The collection of chamber music since 1800 is perhaps excelled only by that in the Royal Library at Berlin. The orchestra scores number about 5,000

[1] Based largely on articles by Mr. O. G. Sonneck, chief of the music division.

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symphonies, suites, concertos, and the like. The collection of vocal scores of operas is estimated to exceed 7,000. Of full orchestral scores of operas there are approximately 3,000, including some 500 special transcripts of old scores not obtainable from dealers. The difficulties confronting every collector of full scores of dramatic music are manifold. There is the great and sometime prohibitive cost of opera scores and the fact that many important old operas were never printed and are preserved only in a few libraries in autograph or contemporary manuscript copies. Then there is the stubborn refusal of certain publishers to sell their operatic scores to libraries and the still more stubborn refusal of some libraries to permit the copying of old opera scores.

The library has been made the depository, largely by gift, of hundreds of the autograph scores of representative musical works by American composers.

No attempt has been made to collect systematically the original editions of music published prior to 1700, as reliance has been placed upon the "Denkmäler" and other historical collections, but numerous specimens of the various editions of different works have been acquired. Of eighteenth century music the Library of Congress has a collection which is more extensive than that in most European libraries.

The music division does not aspire to become a museum of costly relics. It places the best interests of the scholar above everything else. The acquisition of such things as medieval missals and collections of musicians' portraits has been deferred, partly with a possible *en bloc* purchase in view.

The library aims to have a reasonably comprehensive collection of material bearing in any way on music in America and more particularly on American music. The national libraries of Europe have but a slight interest in American music and music in America, excepting as American composers' methods or conditions have become or will become of international interest. In the Library of Congress, on the other hand, while American music is deemed to be of paramount importance, yet it collects the musical product of Europe very much in the same manner as European libraries do. The aim here is to make the collection of music and books on music sufficiently comprehensive to relieve ultimately the American scholar of the necessity of consulting European libraries, except for research not bearing directly or indirectly on music in America as a reflex of music in Europe.

On July 1, 1918, the music division contained 822,009 volumes, pamphlets, and pieces, housed on metallic shelving in one large room and the cellar immediately below. Three additional rooms are used for administrative purposes and for the catalogues. Material is classified on the shelves according to subject and not by size or by date of accession. Sheet music, as well as the bound volumes, is shelved vertically. The sheet music is kept in pamphlet boxes of a convenient size. The collection is catalogued on cards and the catalogue is divided into three groups corresponding with the scheme of classification: Music (M), Literature of Music (ML), and Instruction and Study (MT). The catalogue of music is again subdivided into a composer, a class or subject, and the title index. For the literature of music and instruction and study, the dictionary form of catalogue is used. There are separate indexes of early Americana and the articles in periodicals. Special attention has been paid to this periodical index.

The class of literature, the histories of music and biographies of musicians, the psychology and philosophy of music, as well as essays on musical topics, are particularly well represented. For instance, about one-third of all the books on music published before the year 1800 are now in possession of the Library of Congress. The number of current as well as older periodicals is quite extensive. Nearly all the American periodicals are represented, although a few of the older ones, dating from the beginning of the nineteenth century, are noticeable by their absence.

Under Instruction and Study are classed not only the general theoretical works and methods but instructional editions of musical compositions, teaching pieces, and school readers. The most complete of all the classes under this heading are harmony, counterpoint, orchestration, singing and voice culture, and analytical guides to operas and orchestra music. These have been acquired principally through copyright channels, except in the case of rare and old editions (before 1800) which have been purchased.

Nine attendants give their entire time to this collection. There are 34,994 books on music, including about 20,000 librettos, but exclusive of several

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thousand books on the theory of music classified with Musical Instruction and Study.

Of books on music proper printed before the year 1800 there are not less than 1,500, about one-third of all such books known—a fair illustration of the music division as a treasure house of musical rarities.

It is impossible to say how many volumes or pieces of music the library contains. There are 741,265 volumes and pieces of music, exclusive of many thousands classified with Musical Instruction and Study, such as études, teaching pieces, etc. There are about 5,000 rolls for player pianos, but no phonograph records.

The majority of the books on music are in foreign languages, but the Library of Congress possesses the majority of those printed in English, if of any value. Possibly one-seventh of the music was published outside the United States, but it should be remembered that all music published and copyrighted in the United States comes to the Library of Congress, averaging about 25,000 accessions yearly. Foreign editions are purchased in Europe. While the library is strong in every field of collection, as compared with other libraries, and while it contains innumerable costly and rare scores of European music, old and new, it is still preponderantly strong in American music, by virtue of the copyright act, and in early American music also, by virtue of purchase.

There are, perhaps, 10,000 orchestral scores, of operas, symphonies, concertos, etc., and at least 5,000 or more chamber music works. Preference is always shown for the acquisition of works in their original form. If arrangements are purchased, those for piano, two hands, are preferred.

The policy governing the collection has been that of a National Library. There have been gifts, notably of about 1,000 autograph compositions of American composers; the sum of approximately $150,000 has been expended on the purchase of music and books on music; finally, the value of music and books on music acquired through copyright easily exceeds the sum spent for the purchased material.

The annual expense for purchased music and books on music varies according to opportunity. The minimum allowance for music is $5,000 annually, but in one year more than $10,000 has been spent for music. More than $5,000 has been spent in one year for books on music. No allowance is made for player-piano rolls or phonograph records.

Interest in this library appears to be about uniform from year to year. In 1916–17 there were about 3,500 readers; 15,324 volumes and pieces of music were used, and 6,750 books on music. Readers have the use of a piano in the library. The interlibrary loan system is used without geographical restrictions. "Traveling" libraries are not furnished. Lectures and lecture recitals by volunteers are given under the auspices of the Reading Room for the Blind.

Of course, this library is primarily a reference library. It has no branches. The sum, $10,000, is counted a reasonable annual expenditure, and no preference for either line is shown in the purchase of music or of books on music. The library is planned on a national scale, and the fact that it has been brought to such an attainment should be a source of immense satisfaction to every American who is interested in such matters.

The Public Library of the District of Columbia has plans for the opening of a fine arts division, which have been deferred on account of the losses in personnel due to the war. The music collection will form part of this division when it is opened, and it is expected that the already healthy growth of this department will then be largely increased. At present the collection numbers 1,300 books on music, with 1,800 bound volumes of music, and comparatively

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little sheet music. About 225 orchestral scores, mostly acquired by gift, and about 80 chamber music works are listed. There is a good collection of songs, and the library is strong in two and four hand piano arrangements. At one time the library had a small collection of music rolls, but the plan had to be given up. Whether it will be revived or not can not be said at present. Because of the proximity of the Library of Congress the Public Library does not cater to the research student, but the historical collection does afford opportunity for intensive study. Of the total library use, music amounts to 3 per cent and books on music 1 per cent.

PUBLICATIONS OF LIBRARY OF CONGRESS.

CLASSIFICATION: Class M, Music; Class ML, Literature of music; Class MT, Music instruction. Adopted 1902. 1917 (revised). 157 p. 25½cm. Paper, 10c. 4–21982.

DRAMATIC MUSIC. Dramatic music, catalogue of full scores; comp. by O. G. T. Sonneck, Chief, Division of Music. 1908. 170 p. 25½cm. Cloth, 40c. 8–35001.

EARLY MUSIC. Catalogue of early books on music. (Before 1800); by Julia Gregory, Catalogue Division. Prepared under the direction of O. G. T. Sonneck, Chief, Division of Music. 1913. 312 p. 25½cm. Cloth, 60c. 12–35008.

FOSTER CATALOGUE. Catalogue of first editions of Stephen C. Foster. (1826–1864.) By Walter R. Whittlesey and O. G. T. Sonneck, Chief, Music Division. 1915. 79 p. 25½cm. Cloth, 40c. 14–30011.

MACDOWELL CATALOGUE. Catalogue of first editions of Edward MacDowell (1861–1908). By O. G. Sonneck, Chief, Division of Music. 1917. 89 p. 25½cm. Cloth, 40c. 17–26002.

OPERA LIBRETTOS. Catalogue of opera librettos. Printed before 1800. Prepared by O. G. T. Sonneck, Chief, Division of Music. 2 v. 1914. 1674 p. 25½cm. Cloth, $2 per set. 13–35009.

ORCHESTRAL MUSIC. Catalogue of orchestral music. Part I, scores; comp. under the direction of O. G. T. Sonneck, Chief, Division of Music. 1912. 663 p. 25½cm. Cloth, $1. 11–35001.

STAR-SPANGLED BANNER.[1] Report on the "Star-spangled banner," "Hail Columbia," "America," "Yankee Doodle"; comp. by O. G. T. Sonneck, Chief, Division of Music. 1909. 255 p. Plates. 25½cm. Cloth, 85c. 9–35010.

This publication resulted from a request for information on the historical evolution of the songs and their music. The report has been printed in order to preserve the material in convenient and critical form for future reference, and facsimiles have been included to facilitate the study of the text. It is not for free distribution, but sold only by the Superintendent of Documents, Government Printing Office.

——— Revised and enlarged edition of the chapter on the "Report on the Star-spangled banner" issued in 1909. 1914. 115 p. Plates. 25½cm. Cloth, 85c. 13–35008.

FLORIDA.

Items reported.	Number of libraries reporting—							
	1–25	26–50	100–150	180	300	400	$15	$25
Books on music	2	1	1					
Bound volumes of music	1	1	1					
Separate pieces					1	1		
Player-piano rolls		1						
Phonograph records				1				
Scores	1							
Annual expense for music							1	[1]2
Annual appropriation								1

[1] One includes both music and books on music.

The summarized report for the four libraries replying indicates comparatively small attention to the music departments. Two libraries report increasing

[1] Exhausted.

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interest, and three believe their present musical facilities inadequate for the needs of the respective communities.

GEORGIA.

Five reports from Georgia indicate almost total stagnation in musical library activities. Not one of the five libraries has over 25 books on music, while one has 25 bound volumes of music, and 25 phonograph records are reported by one library; no sheet music is reported at all. The single annual appropriation is $5 at one library for books on music.

IDAHO.

At the *Lewiston State Normal School Library* there are 150 books on music and 48 separate pieces of music, with 60 player-piano rolls and 150 phonograph records. The collection is planned with a view to its use in the school, and about $50 is spent annually for books on music and $10 for rolls and records. Records are sent out as "traveling" libraries. Two recitals a year are given under library auspices.

The *Idaho Free Traveling Library*, located at Boise, sends out special cases of books on music, but has no special music department

ILLINOIS.

Items reported.	Number of libraries reporting—										
	1–25	26–50	51–100	150–450	500–700	750–950	1,000	2,000	3,500	4,200	13,000
Books on music	9	15	7	14	4	.....	1	1	.....	.....	[1] 1
Bound volumes of music	3	1	2	7	1	2	.....	1	.....	.....	.....
Separate pieces	.....	.....	2	2	2	.....	.....	.....	1	1	.....
Player-piano rolls	1	1	.....	.....	1	.....	.....	.....	.....	.....	.....
Phonograph records	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....
Scores	1	.....	2	2	.....	.....	.....	.....	.....	.....	.....
Chamber-music works	1	2	2	1	.....	.....	.....	.....	.....	.....	.....

Items reported.	Not over $25.	$26–$50.	$51–$100.	$250.	$350.	$400.	$500.	$2,500.
Annual expense for—								
Music	.....	1	[1] 1	[1] 1	.....	[1] 1+1	1	.....
Books on music	4	1	2	.....	.....	1	.....	.....
Library fund appropriation	1	.....	.....	.....	1	.....	1	.....
Endowment fund appropriation	.....	.....	1	.....	1	.....	.....	.....
Ideal appropriation	1	1	2	.....	3	1	1	1

[1] Includes books on music and bound volumes of music.

In Illinois 58 libraries report music departments, and the average size of the collections is above that reported by most States. There are several large collections and a number of special features, as listed below: Eighteen libraries use special bulletins or newspaper notice of new accessions, 11 report increasing interest, 14 stationary, and 1 a decrease since the war. Only 4 libraries believe their collections commensurate with the community's interest in music, 12 would add to the music itself, 19 to books on music, and 1 library is anxious to increase its supply of orchestral scores.

The *Cairo Public Library* is one of the smaller collections, but the material seems to be much used, and the interest, both on the part of the public and the library force, above the average. It is hoped that funds will presently be pro-

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vided for the addition of sheet music, rolls, and records to the present collection of bound volumes.

The *Chicago Public Library* has a room devoted to music only, entirely separate from books on music. The 2,000 bound volumes of music and 3,500 separate pieces are in charge of a librarian who devotes her entire time to this work. There are now 5,120 registered borrowers of music, and the collection is deemed inadequate for the demand. The library carries no orchestral scores, but has numerous arrangements of orchestral works and 300 scores (with parts) of chamber music. "Popular home music" is the strong field in the collection, along with songs, vocal scores of operas, and chamber music. The selection of music is dictated by the library's policy and expert advice, and the material is acquired by purchase, $7,500 having been spent to date, with an annual appropriation of $500 for music; $100 of this comes from an endowment fund, and $2,500 is considered an ideal annual sum for the purchase of both books on music and music to meet the needs of this library. There are no musical instruments in the library, though one of the 42 branches has had a gift of 500 music rolls.

By agreement, the *John Crerar Library*, of Chicago, leaves music to the field of the Newberry Library. The Crerar Library, however, collects books on the manufacture and history of musical instruments and on the theory of musical sound.

The *Newberry Library*, of Chicago, has 12,829 volumes and pamphlets listed under music. Each individual work is counted as one, not by collective bindings. There are 220 orchestral scores and 33 chamber music works. There is a collection (not recent) of about 4,000 volumes on hymnology, and the private library of the late Theodore Thomas is also found here. The general collection is strong in operas, complete works of composers, older works on theory, hymnology, and church music. Gifts are comparatively rare; purchases are made in accordance with the library policy. Opportunity for musical research is afforded in the way of critical editions of compositions, complete works of composers, minute differences of edition in hymn books, full scores of operas, and unindexed clippings relating to concerts. The annual expenditure is $450 for books on music. Owing to a change in the policy of the library, which resulted in specializing on literature and history, and the transfer of a large amount of duplicate music to the circulation facilities of the Chicago Public Library, the collections of the Newberry Library (reference only) show a decreased use in recent years. The number of volumes used in 1917 was 3,263. Though the present policy precludes large purchases of books on music, the expenditure last year in this line was about 3 per cent of the total outlay for book acquisition, and the library still favors the addition of full scores and books on music. Special collections acquired by the library, in addition to the Theodore Thomas library, are those of Count Resse (Florence), Lob and Fuchs (Chicago), and Main (New York).

The *Virginia Library of McCormick Theological Seminary*, in Chicago, is specially strong in church music and hymnology. The collection, largely acquired by gift, includes 1,000 books on music and 750 bound volumes of music.

The *Evanston Public Library* has 2,000 volumes on and of music, 397 separate pieces of music, and 652 player-piano rolls. There is the rather unusual provision that readers are allowed, in addition to the usual number of books on a card, two books on music, two volumes of printed music, and two pianola rolls. The strong feature of this library is its collection of vocal scores of operas. It has 38 chamber music works and purchases not only piano music for two or four hands,

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but also two-piano music. On the music department $2,000 has thus far been spent, and there is an annual income from an endowment fund of $322.50 for music department purchases. The interest is increasing, and last year 1,600 persons used the music collection; the relative order of use being books on music, music, and music rolls. Readers have the use of a piano and player-piano in the library.

The printed catalogue of the Coe Music Collection and other musical literature in the Evanston Public Library is a book of 126 pages, dated 1916, and is valuable as one of the latest and most complete lists of its kind.

Two squares from the Evanston Public Library is the school of music of *Northwestern University*, and here again is an example of sensible cooperation in library matters. As the public library is well suited for general use, the university library specializes. It has 450 books on music and 25 bound volumes of music, with thousands of unbound pieces which are regarded as part of the teaching equipment. There are about 200 orchestral scores, with many piano arrangements for two and four hands. The need of a chamber music collection is obviated by a large collection owned by a member of the faculty. The strong point of the library is new publications. There are no gifts, everything being purchased in accordance with the policy of the library and faculty advice. An appropriation from library funds permits the annual outlay of $400 for music and $100 for books on music.

The *Peoria Public Library* published a 56-page list of music and books on music and musicians in March, 1915. It summarizes 690 books on music and 950 bound volumes of music, selected with a view to general use.

The *Rockford Public Library* has 600 books on music and 150 bound volumes of music, all acquired by purchase. It has a special card index to all song collections, to which the patrons are partial. About $75 a year is spent on the music department, which seems to satisfy the local demand.

The library of the *University of Illinois*, at Urbana, has 600 books on music and 4,215 volumes and cardboard-bound pieces of music. There are about 100 orchestral scores, and this number is increased yearly. There are also 100 chamber music works. The specialties are organ music, books on music, piano and string instrument music. Practically all of this library has been acquired by purchase, and about $3,000 has been spent thus far, the annual appropriation for the library being $400. There is opportunity for intensive study of organ music, history of music, and the classic cantata field. About 2,000 persons use the library each year, but since no publicity means are used the public is not acquainted with the scope and size of the music collection. The policy of the library is to add both books and music in larger measure than in the past. Music rolls are used only in the school proper, not in the library.

INDIANA.

Items reported	Number of institutions reporting—									
	1–25	26–50	65–100	150–200	225–350	500–600	700–850	1,300	1,850	2,475
Books on music	7	7	14	5	4	1	1	.....	.....	.....
Bound volumes of music	5	2	2	1	.....	1	1	.....	.....	1
Separate pieces	.....	.....	3	1	.....	1	.....	2	1	.....
Phonograph records	2	.....	.....	1	2	.....	.....	.....	.....	.....
Player rolls	.....	.....	.....	3	1	.....	.....	1	.....	.....
Scores	1	2	1	.....	.....	.....	.....	.....	.....	.....
Chamber music works	2	1	1	.....	.....	.....	.....	.....	.....	.....

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In Indiana the music library situation appears to be in a healthy and encouraging condition; 41 libraries report music sections and 13 of these believe their music facilities should be enlarged to meet the demands of the communities; 14 libraries report increasing interest in music, 7 stationary, and 1 decreasing. There are few large collections of music in these libraries, but a good distribution of material. Pianos and phonographs are more frequently found in libraries here than in most Eastern States. Nearly one-half of the Indiana libraries use some special means of announcing accessions, and in general there is a refreshing spirit about the reports.

The *Gary Public Library* has an unusual number of player-piano rolls, 1,100. For these, the 100 books on music and the 150 bound volumes of music, the average number of users in a year is 11,000. There is a piano and player-piano in the library, and a phonograph is borrowed for special use. Lecture recitals are given under the auspices of the library, and at least the expenses of the speakers are paid. The first list of roll titles, comprising over 500 selections, was published in a bulletin of August, 1915.

At *Muncie* an upbuilding of the music section in the public library is in progress. Each month a few new books on music and of music are added and some publicity given in the newspapers. As soon as funds and space will permit band and orchestra music, records, and rolls will be added. Five musical periodicals are on the subscription list for this year.

At *Princeton* the interest of two teachers of music in the schools is noted at the Public Library. The collection of books about music numbers 75, fairly well selected.

The music library at *St. Meinrad Abbey*, St. Meinrad, contains 150 books on music, 700 bound volumes of music, 1,300 separate pieces, 200 player-piano rolls, and 300 records, only used by those living in the institution. Especial attention has been given to works on the Gregorian chant. Frequent concerts and phonograph programs are given, with explanatory lectures.

The *Public Library at South Bend* works with the teachers of the city and with the various associations in music study, furnishing books, making bibliographies, assisting in program making, speaking before assemblies, and generally showing that the library is willing to cooperate. The result is a steadily increasing interest in the music section, and it is hoped that both facilities and the collection itself may soon be largely developed.

The *Public Library at Tipton* has monthly lectures and lecture recitals, and some Sunday afternoon musicales, working in conjunction with the local music club. Some lecturers are paid. There are 100 volumes each of books on music and bound music and 25 phonograph records.

IOWA.

Items reported.	Number of institutions reporting—								
	1–25	26–50	65–100	120–200	225–350	500–600	1,500	5,500	6,900
Books on music	14	13	9	7	5	1	1	.....	.....
Bound volumes of music	9	2	4	1	.....	.....	.....	1	.....
Separate pieces	.....	1	.....	1	.....	.....	.....	.....	1
Player rolls	1	1	.....	1	.....	.....	.....	.....	.....
Phonograph records	.....	1	2	.....	.....	.....	.....	.....	.....
Scores	1	2	1	.....	.....	.....	.....	.....	.....
Chamber music works	1	.....	.....	1	.....	.....	.....	.....	.....

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Items reported.	Number of institutions reporting—						
	$1–25	$30–50	$60	$100	$200	$300–400	$3,000
Acquisition cost			1	3	1	2	1
Annual expense for—							
Music	2			2	1		
Books on music	3	4					
Rolls and records	1	2					

In Iowa general music library conditions strongly resemble those in Indiana; 45 libraries report music sections, and 13 of these say interest is increasing, 7 stationary, but none report a decrease. Bulletins and special notices of accessions are frequently used. The ideal annual appropriations for music section purposes are set high, only one at $35, two at $100, two at $500, one at $700, one at $2,000, and one at $6,000.

The library of the *Davenport Academy of Sciences*, at Davenport, does not contain a music department, but does have some musical books. In its fairly large anthropological and ethnological collection there is considerable material on primitive music and the music of primitive peoples, with some corresponding instruments. Some material for students might also be found in the historical collections.

Annually 6,000 people use the library of the *Grinnell College* school of music, at Grinnell. This collection has 275 books on music, 85 bound volumes of music, 6,900 separate pieces of music in the circulating section, and a large supply of choir and oratorio music for college use. There are 45 rolls and 50 records, with 60 orchestral scores and 120 chamber music works. The policy has been to develop a working collection in all departments for college and music students; therefore the collection is strongest in musical literature and piano music. The annual expense is about $200 for music, $45 for books on music, $35 for records, and $10 for rolls; and there is a desire to increase the last two items. There is an effort to have the complete works of classical composers. The extension of the use of the library to other communities is limited by financial necessity, but the library will be glad to cooperate in any means which may be devised to assist in such extension of this work.

The *Public Library at Sioux City* was responsible for three years for a series of Sunday afternoon concerts, held during the winter months at the library. The past season a municipal orchestra was organized, and the Sunday afternoon concert work is carried on by this organization on a much larger scale.

The *Iowa College for the Blind*, at Vinton, has 300 pieces of music in New York point, and 500 pieces in staff notation, with 80 books on music. Music is sent out to former students.

KANSAS.

Items reported.	Number of libraries reporting—								
	1–25	26–49	50–85	100	150–175	200	400	500	1,000
Books on music	2	7	9	3	2		1		1
Bound volumes of music	1	3					1	1	
Separate pieces	1	1	2						
Phonograph records						1		1	
Orchestral scores	1								
Chamber music works			1						

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In Kansas not one of the 27 libraries reporting mentions a player piano or a roll, though phonographs and records are fairly common. The average size of the collections of books on music is fair. Six libraries report increasing interest, one stationary; the others are noncommittal, though seven libraries believe their present collections of music sufficient for the demands of the community.

In the library of the *University of Kansas*, at Lawrence, one librarian gives her time largely to the collection of 400 books on music, 500 bound volumes of music, and 50 separate pieces; 500 Victrola records are kept in a separate collection. The purchase of orchestral scores is just beginning, 20 being acquired to date, with 50 chamber music works. The policy has been to provide reference works for students; therefore the strong fields of the library are the literature of music, folk songs, songs and vocal scores of operas. The collection to date has cost $2,500; there is an annual appropriation of $300 from the library funds, of which $200 is used for music and $100 for books on music. There is an additional annual expense of $100 for records. The library believes that $750 could well be spent yearly on the music and books to meet the demand. Thirteen sets of music records, each accompanied by a typewritten talk on some phase of music, are sent out as traveling libraries; 288 of these programs were given in 1916–17. The printed circular of this plan has the title "More and better music for Kansas." Public-school music is receiving special attention. Books and music are loaned to high schools and clubs requesting such service.

The *Free Public Library at Salina* notes the fact that the public is just beginning to realize the possibilities of the music section. It is hoped that a good line of phonograph records may soon be installed for circulation.

The *Kansas State Normal School Library*, at Emporia, has about 1,000 books on music and 300 bound volumes of music. No fixed amount is appropriated annually for music, but $150 is regarded as the ideal annual sum to meet the needs. Interest is increasing, and there are four calls for books on music to one for music. Traveling libraries are furnished.

KENTUCKY.

Of the 7 libraries in Kentucky reporting music sections 6 are below 75 volumes of books on music or bound volumes of music. The seventh is the *Free Public Library at Louisville*, where the music department seems to receive special attention. Its contents are set forth in an attractive booklet of 74 pages, fully and elaborately classified. The collection includes a total of 4,000 volumes on and of music and of unbound pieces, evidently well chosen for general use and without emphasis of special departments. There are good collections of operatic vocal scores, children's songs, some two-piano music, quite a list of modern orchestral scores, music by Kentucky composers, and some books for the blind. The entire plan might well be taken as an example of successful choice and management. Music is circulated on regular library cards, so it does not figure as a separate item; 5,741 books on and of music were borrowed last year. There is a loan system with other libraries, and the public library works actively with the University of Louisville and the Louisville Conservatory of Music. Mention is made of the aid and advice of musicians and music lovers in the city.

LOUISIANA.

Three of the four Louisiana libraries reporting a music section have considerable departments, and each of the three reports increasing interest.

The *New Orleans Public Library* aims to provide only for the general music lover. It has 300 books on music and 333 bound volumes of music; no separate

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pieces, rolls, or records; $75 annually is spent on the music department, but the library regards $300 as the ideal sum for this purpose. Three books on music are borrowed to one volume of bound music. The library keeps in constant touch with the music teachers' association of New Orleans.

The *Howard Memorial Library of New Orleans* specializes on music by local composers or printed in New Orleans, and has 510 separate pieces in this class as a part of its general collection of Louisiana literature. In addition there are in the music alcove 223 books on music and 20 bound volumes of music. This is a reference library of 50,000 volumes, and the preference of the patrons is decidedly in favor of the books on music, for which the sum of $20 is spent annually.

At the *H. Sophie Newcomb Memorial College* the library has 500 books on music, 600 bound volumes of music, 350 separate pieces, 244 rolls, and 25 records. This library has only been in existence eight years. It regards the collection as well balanced, with perhaps some emphasis on piano, organ, and vocal music, and biography. Two thousand dollars has been spent on the collection, and there is an annual music department appropriation of $200 from library funds.

MAINE.

Items reported.	Number of libraries reporting—							
	1–25	26–49	50	80–100	200	250	300	1,100
Books on music	10	3	3	4	2	1	.....	.....
Bound volumes of music	4	.....	2	1	1	.....	.....	.....
Separate pieces	.....	1	.....	1	.....	.....	.....	1
Player rolls	2	.....	.....	.....	.....	.....	.....	.....
Phonograph records	.....	.....	.....	.....	.....	.....	1	.....
Scores	1	.....	.....	.....	.....	.....	.....	.....
Chamber music works	1	.....	.....	.....	.....	.....	.....	.....

Items reported.	Number of libraries reporting—								
	$5	$10	$20	$25	$50	$60	$75	$100	$125
Acquisition cost	.....	.....	.....	.....	.....	1	1	.....	1
Annual expense for—									
Music	1	.....	.....	1	.....	.....	.....	.....	.....
Books on music	.....	1	1	.....	.....	.....	.....	1	.....
Rolls and records	.....	.....	.....	.....	.....	.....	.....	1	.....
Ideal appropriations	.....	.....	.....	.....	.....	1	1	.....	.....

In Maine a general spirit of caution seems to pervade music section expenses, as will be noted from the attached table. None of the 25 libraries reporting music sections are exclusively reference libraries, though 5 are both reference and circulating. Three report increasing interest, 3 stationary, while 17 make no comment.

The *Public Library at Auburn* has a comparatively new music section, acquired partly by gift and partly by purchase. Without making a specialty of music, certain privileges are allowed music borrowers upon occasion, and traveling libraries are furnished upon request of rural schools.

The *Bowdoin College Library*, at Brunswick, collects musical settings of Longfellow's words, and at present has nearly 1,000 such titles. Courses in music have only been instituted in the college during the past six years, during which time the bulk of the music collection has been acquired.

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There are now 190 books on music, 200 bound volumes of music, about 1,100 separate pieces, 25 player-piano rolls, over 300 records, and 25 orchestral records in the library. These have been selected to further the college music courses, and the annual expense for this material is now about $225.

MARYLAND.

Items reported.	Number of libraries reporting—											
	1–25	26–49	50	85	165	250	300	400	500	1,000	1,500	1,800
Books on music	3	1	.....	1	.....	1	.....	.....	.....	1	1	.....
Bound volumes of music	2	.....	1	.....	1	.....	.....	1	.....	.....	.....	1
Separate pieces	.....	.....	.....	.....	.....	1	1	.....	.....	.....	.....	.....
Scores	.....	.....	1	.....	.....	.....	1	.....	.....	.....	.....	.....
Chamber music works	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....

In Maryland at least two of the eight libraries reporting music departments have important collections. Three are reference libraries and four are circulating or circulating and reference. Increasing interest is reported by two, and decreasing interest by one. Few figures as to cost or music department appropriations are given.

The library of the *Peabody Institute* of the city of Baltimore is separate from that of the Peabody Conservatory of Music. The former has 1,500 books on music and 400 bound volumes of music, with 800 orchestral scores. It affords facilities for serious study in the history of music and musical literature. The average number of persons using this reference library annually is 1,000, of whom 90 per cent use the books on music.

The *Enoch Pratt Free Library* of Baltimore has about 1,000 books on music, 1,800 bound volumes of music, 60 orchestral scores, and 500 chamber music works. The strong points are the collections of vocal and piano music, which afford material for serious study. On music $75 is spent annually and $100 on books about music, mostly from library funds proper. Concerts are given at the branch libraries, of which there are 18. About 50 lectures or lecture recitals, with unpaid lecturers, are given annually under library auspices.

MASSACHUSETTS.

Items reported.	Number of libraries reporting—										
	1–25	26–49	50–99	100–149	150–200	250–350	400	500	600–700	1,000	Over 1,000.
Books on music	52	18	17	9	5	7	5	6	8	4	8
Bound volumes of music	12	3	7	5	1	2	4	1	2	6	7
Separate pieces	.....	.....	2	.....	4	3	.....	1	.....	1	5
Player-piano rolls	1	.....	1	1	1	.....	.....	.....	.....	.....	1
Phonograph records	2	.....	1	.....	1	1	.....	.....	.....	.....	.....
Scores	8	5	2	1	1	4	2	.....	.....	.....	1
Chamber music works	4	2	5	.....	3	.....	.....	.....	.....	1	.....

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Items reported.	Number of libraries reporting—									
	$25	$26–50	$51–99	$100	$125	$200	$250	$300	$500	Over $1,000.
Annual expenses.										
Total for music section			2	1	2	1			2	
In addition to following:										
For music	4	2		4		1	1		2	1
For books on music	1	3	1	2						
For rolls and records	1	1								
Appropriations.										
From library funds		1	1	1	1		1	1		
From endowment				1		1			1	
From special funds	1					1				

The above does not include the library of Harvard University, one of the important music libraries of the United States, which failed to answer the questionnaire.

In 1913, Massachusetts reported 343 libraries with 5,000 volumes or over, somewhat over one-ninth of the total of such libraries in the United States, and exceeding New York with its 326 libraries of this size. Of these Massachusetts libraries, 142 report music sections, of sizes tabulated herewith. As usual in eastern as compared with western libraries, player-piano and phonograph material is sparsely represented; 25 libraries report increasing interest in music, 16 stationary, and only 1 decreasing. Many special features are noted in the following accounts of individual libraries.

The *Boston Public Library* is widely known for the possession of the Allen A. Brown collection, which supplements the general music collection of the library. The "music room" now contains 15,000 books on music, and 26,000 bound volumes of music. Two librarians give their entire time, and a third part time to the musical collection.

Neither rolls nor records find place in this library. There are now 4,000 orchestral scores listed. Scores of important works are purchased whenever possible, in preference to pianoforte arrangements. Chamber music works are represented to the number of 950. While the collection is intended to be as complete as possible, it is specially strong in opera scores, part songs, orchestral music, and the history of music, particularly of Boston. The catalogue of the Allen A. Brown collection is published in four volumes. About $500 is now spent annually on music; the expense of books on music is not available as a separate item. Last year 21,000 persons used the music collection, and the interest is increasing. The inter-library loan system is used, but traveling libraries are not furnished. Six lectures or lecture-recitals are given annually, with no fees for the lecturers.

The story of the Allen A. Brown collection is told by Miss Barbara Duncan in an entertaining article in The Library Journal for August, 1915. From this source may be gleaned the following statements: The scores contain innumerable programs, newspaper clippings, portraits, etc., relating to the particular works. A set of volumes, indexed, contain programs, newspaper criticisms, personal notices of musicians, and all matters of musical interest in Boston during the past 50 years. A similar system has been followed for items of general musical interest. The collection of autograph scores has not been

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generally followed, although the American composers Paine, Buck, Converse, Foote, Chadwick, and Gilbert are so represented. The most unique item of early American music is Francis Hopkinson's "Seven Songs" (1788), of which only one other copy is known. The operatic section of the collection is annotated as are other works, and contains many rare and valuable works.

At Boston is also the library of the *New England Conservatory of Music.* The 5,000 volumes of music and books on music are in charge of one librarian (trained as a music librarian) and two assistants. There are 14,000 actual users of the collection annually, and there are both reference and circulating departments.

The *Harvard Musical Association Library* in Boston has 9,000 volumes of music and books. Some volumes contain two to a dozen works, bound together. Orchestral scores number 400, and chamber music works 285. No specialties have been followed in making the collection, which affords opportunities for the serious student in many fields. About $20,000 has been spent to date on the library, and there is an annual outlay of $500 for books and music. The average number of actual users of the library annually is 600. A piano is available in the library.

The Musical Observer of October, 1909, contains a historical account of the Harvard Musical Association, written by Ernest O. Hiler. This reviews the organization, its objects, and achievements, in addition to the library.

The *Congregational Library*, 14 Beacon Street, Boston, has 773 books classed under hymnology; 62 of these are books on hymns and hymnists, and 711 are largely hymnals.

The proximity of the research collections at Boston and Cambridge has had an effect on the *Public Library of Brookline*, in that the latter has directed its efforts toward a general collection for popular use. It now numbers 675 books on music and 1,875 titles of music in volumes or covers. There are 17 volumes of orchestral scores and 190 volumes of chamber music. Arrangements are bought in preference to orchestral scores, largely in piano duet form, but also for solo and two pianos. One thousand eight hundred and eighty-seven dollars has been spent on acquiring the collection, and from $25 to $50 annually for music; 1,803 volumes of music were borrowed in 1917. With an assistant specially for the music section, it is believed the work of this department could be largely expanded to good advantage.

In the library of *Andover-Harvard Theological Seminary*, at Cambridge, 1,250 volumes on and of music, exclusively in the departments of hymnology and church music, are found. This library is administered in close affiliation with that of Harvard University, and the collections of both libraries are accessible to all students.

The *Cambridge Public Library* has 599 books on music and 801 bound volumes of music, with 116 orchestral scores and 41 chamber-music scores. The aim is to make it a "popular" collection in the best sense, and suggestions from patrons are considered. One hundred and seventy-five dollars is spent annually on the music department, but $1,000 would be welcome, as interest is increasing. There is an endowment fund of $5,000, the interest from which goes to the music department. Readers have the use of a piano in the library, and this is one of the few eastern libraries that hopes to add a department of phonograph records. Books, but not music, are furnished for traveling libraries.

The library of the late Francis H. Jenks, consisting of music literature and scores, the latter plentifully annotated with reviews and criticisms, was presented to the *Fitchburg Public Library*, at Fitchburg, by Herbert I. Wallace in

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1905. The special catalogue of this collection is printed separately, as are two other music lists of this library. On music 972 books and 2,416 bound volumes constitute the total collection at present, with 68 orchestral scores and 236 chamber music works. The strong points are the full scores of operas and oratorios, annotated by Mr. Jenks, piano music, and piano arrangements, for two, four, and eight hands. For music $100 is spent annually, while books are bought from the general fund. The circulation divides 60 per cent for music and 40 per cent for music books, with increasing interest in the department. The library cooperates with the State normal and high schools, also with the Woman's Club.

The *Newton Free Library*, at Newton, engaged Mr. Wallace Goodrich to select, in Europe, a representative collection of classical music which has proven adequate to the demand; 2,000 books on music, 1,000 bound volumes, and 200 separate pieces of music constitute the collection, a printed catalogue of which was issued in 1910. Music is purchased as needed from an endowment fund.

The *Forbes Library*, at Northampton, has 1,250 books on music, about 6,000 bound volumes of music, and 11,054 unbound pieces of music. One librarian gives her entire time to the music department, in which increased interest is reported. No count is kept of readers, but about 6,000 works were issued in 1916. Five hundred to one thousand dollars is counted the ideal sum for the annual purchases of the music department. There are four victrolas, with 38 records, for school use only. Orchestral scores of symphonies, with piano solo and duet arrangements, are bought; the library now has 250 scores and 20 chamber music works. There are complete editions of Bach, Händel, Schumann, Schubert, Palestrina, Beethoven, Mendelssohn, Grétry, Schütz, and the *Denkmäler der Tonkunst*. In addition, the library has large collections of songs, piano music, and vocal scores of operas. Music exhibits and local press publicity stimulate interest in the music section.

The *Smith College Library*, at Northampton, has 572 books on music, 850 bound volumes of music, 2,239 unbound pieces of music, 100 pianola rolls, and 300 records. French and German books make about one-sixteenth of the total. There are 250 orchestral scores and 40 of chamber music. Annually $200 is expended for music and $100 for books on music, of which sums $100 is from library funds proper and the balance from a special fund. Interest in the collection is increasing, and the library would gladly spend $500 annually for music and books on music. Of the calls, 20 per cent are for rolls and records; there is a piano, player piano, and victrola in the library.

The *Berkshire Athenæum and Museum*, at Pittsfield, has a good collection of "Shaker" music and a fair collection of church music. In all, there are 700 books on music, 150 bound volumes, and 200 separate pieces of music, with 24 phonograph records. Interest in the music section is growing steadily.

The *Salem Public Library* at Salem has 500 books on music, but no music. A bulletin largely devoted to the music section was published in January, 1901.

Mount Holyoke College Library, at South Hadley, is built up with a view to student needs, though visitors in the main library are always welcome. The collection consists of 390 books on music, 371 bound volumes, and 50 pieces of music, 12 player-piano rolls, and 150 phonograph records. So far it has cost at least $2,000, and $290 is annually appropriated by the college for additions. This sum is divided into an allowance of $150 for music, $100 for books on music, and $40 for rolls and records. In some years $200 or $300 additional accrues from gifts. There are few scores or chamber-music works at present, piano-solo arrangements being preferred for practical purposes. No special line of collection has been followed, but the complete edition of Bach's works has been acquired.

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The *City Library of Springfield* finds that music and books on music amount to 2 per cent of the entire library circulation. It is eighth among 19 classes, ranking higher than history, biography, or travel; 9,479 works in the music collection were taken out last year. The library cooperates with music clubs and leaders in community work. It displays notices of coming musical events in New York and Boston, as well as local affairs. The shelves are open and very accessible in a large, well-lighted room. While attendants are always ready to assist, people quietly help themselves to a surprising degree. The collection includes 1,000 titles of books on music and many duplicate copies. Whatever music is bought in sheet form is collected and bound; the music now aggregates 2,200 titles; 160 orchestral scores have been purchased to answer a demand, and there are 85 titles of chamber music works. No effort has been made to develop any one field of the collection, but it affords some opportunity for research work in the line of hymnology and glees. About $7,000 has been spent on the music section since 1904, and there is an annual appropriation of $550 from an endowment fund. The library has a very full general card catalogue, a title index of song and piano collections, and a praiseworthy separately printed catalogue of the music section. The library bulletin for October, 1915, was largely devoted to music, and is valuable as a suggestive list for general readers and librarians. Special lists of music appreciation and music for beginners are also published. The interlibrary loan system is occasionally used, and one lecture has recently been given as an experiment. Few library reports give more encouraging evidence of activity along sensible and popular lines so far as the music department is concerned.

The fine library of the late Frederic Louis Ritter, music historian, former professor at Vassar College, formed the nucleus of the *Tufts College Library* at Medford (post office, Tufts College). This collection is rich in older works, some in fine and rare editions, and in original books and scores of the sixteenth, seventeenth, and eighteenth centuries. There is no epoch in musical history up to 1890 which is not represented sufficiently to make possible a direct study from this material. The printed lists are sadly out of date, but the roll catalogue is more nearly complete. The printed collection is made up of 2,000 books on music, 600 bound volumes of music, and 1,400 separate pieces. The piano rolls number 1,400, one of the largest collections in the country, and are in very constant use. There are 400 orchestral scores and 50 chamber music works. All fields are well represented except music by American composers, but works of historical significance are probably the specialty. About $75 is expended annually for additions to the music section.

Perkins Institution for the Blind, at Watertown, has 250 books on music, 300 bound volumes, and 10,000 separate pieces of music. Piano and vocal music, both solo and chorus, are the special fields. In addition to the regular catalogue there is a Braille catalogue and a Braille thematic catalogue of piano music. The average number of library users is 2,000 per year, and readers have the use of a piano in the library. Braille music for the blind is sent all over the United States free of postage, and the average is 700 calls per year for this privilege.

The library of *Wellesley College*, at Wellesley, is planned on general lines for students of practical and theoretical music. It now has 600 books on music, 380 bound volumes and 136 unbound pieces of music, 182 player piano rolls, and 78 phonograph records. From $1,500 to $2,000 is the estimated cost of this material, and there is an annual appropriation of $130 for music and books on music, while $25 annually, charged as a music department expense, goes to the purchase of rolls and records.

The *Whitinsville Social Library*, at Whitinsville, has but a small collection of books on music, but is marked by two unique features. One is that when scenes

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from a well-known opera are given at the moving pictures, books containing the story of such operas are advertised in the local papers. The other fact is that the librarian loans four-hand arrangements of standard orchestral compositions to study clubs from a personal collection.

In the library of the American Antiquarian Society at Worcester are 1,000 books on music and psalmody, nearly all published in the United States before 1870.

The *Free Public Library at Worcester* has 600 books on music (practically all in English), 1,400 bound volumes of music, and 800 unbound pieces, with 10 orchestral scores. A printed catalogue of music was issued in 1906, and a special card catalogue is placed in the music alcove. Over 6,000 persons use the music department annually, and the relative percentages are 60 per cent for music and 40 per cent for books on music. Three branch libraries have small music collections. Lack of space in the antiquated main library building prevents an extension of the music work.

MICHIGAN.

Items reported.	Number of libraries reporting—												
	1–25	26–49	50	75–99	100	125–150	200	250	300–400	500	800	1,200	2,000
Books on music	9	3	6	3	3	4	2	1	1	4	.....	1	.....
Bound volumes of music	8	2	2	1	.....	1	1	1	.....	.....	1	.....	.....
Separate pieces	1	.....	.....	.....	.....	1	.....	.....	1	.....	.....	.....	1
Phonograph records	.....	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....
Scores	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....
Chamber music	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....

In Michigan, 41 libraries report music sections, rather above the average in size, but only 5 libraries can estimate the cost of the material, and in no case stated is it above $500. Eight libraries report increased interest in music, seven stationary, and none decreasing. One library reports an annual expenditure of $125 for rolls and records, and five others (all that mention the subject) have an annual expense of $25 for music department purchases.

The library of the *University of Michigan*, at Ann Arbor, has followed the policy of avoiding works of only passing interest. There are now 333 orchestral scores in the library, and special stress will be laid on this division. There will also be a demand for books of research value in the future. There are 230 titles of chamber music works, mostly with parts. By request about 1,500 titles, including orchestral scores, historical works on theory, etc., and a large number of chamber music works, will eventually become available. The present collection includes 1,237 books on music and 3,839 bound volumes or titles of music. History, biography, and theoretical works make the largest group in the books on music, while piano, orchestral scores, chamber music, anthems, and part songs are the strongest in the music class.

The *Detroit Public Library* will soon occupy a new building, in which ample accommodations have been reserved for a department of drama and music. Under the conditions heretofore prevailing, accommodations for special departments were not available, and no special attention could be paid to the music section.

To the *Public Library at Grand Rapids* was presented the library of the late Mrs. Charles B. Kelsey. A substantial gift of music and vocal scores of operas was made by the civic music committee of the association of commerce,

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and donations have also been made by local musicians. Altogether there are now 700 books on music, 50 bound volumes of music, and about 150 pieces. No separate account is kept for music-department expenses, but the library would like to spend $250 to $500 annually on this section. The interest is increasing, and, with a larger collection, there would be much greater use. The library bulletin for March, 1917, contains a list of the music, but not of the books on music.

MINNESOTA.

Items reported.	Number of libraries reporting—										
	1–25	26–49	50–75	100–150	200–300	350–550	1,000	1,400	1,600.	2,000	2,350
Books on music	3	1	6	5	3	2	.....	.....	1	.....	1
Bound volumes of music	3	.....	1	1	2	1	1	.....	.....	.....	.....
Separate pieces	.....	.....	1	.....	.....	.....	1	1	.....	1	.....
Player piano rolls	.....	.....	1	1	.....	.....	.....	.....	.....	.....	.....
Phonograph records	.....	.....	2	1	.....	2	.....	.....	.....	.....	.....
Scores	2	1	1	.....	.....	.....	.....	.....	.....	.....	.....
Chamber music works	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....

The outstanding feature of the reports from 22 Minnesota libraries with music sections is the fact that 10 libraries believe their musical collections inadequate, and 11 the sums available too small to meet the demands of the community; 12 report increasing interest; 4, stationary; none decreasing. Only 6 make use of special means to advertise the music departments.

The *Public Library of Minneapolis* has a separate room for the music department, with two librarians devoting their entire time to music. There are 1,600 books on music, 1,040 bound volumes of music, and 1,436 separate unbound pieces; 85 orchestral scores and 285 chamber music works are listed. The aim has been to provide a collection for general use without specializing, but the divisions of biography, chamber music, children's music, songs, piano, vocal scores of operas, and church music are regarded as the strongest points of the section. About $400 yearly is spent on music and books on music. The interest is increasing, and in 1917 the circulation was 12,555, 31 per cent for music and 69 per cent for books on music. For annual needs $600 to $800 is regarded as an ideal sum, probably divided equally between music and books. Rolls and records have not yet been introduced, but it is hoped that such a department may soon be created.

A good example of local music club interest in a library is furnished by the Schubert Club of St. Paul, which recently transferred its music collections to the *St. Paul Public Library*. The same club gave a performance of Sullivan's "Iolanthe" for the benefit of the library music department, and the proceeds were devoted to the purchase of additional music. There are now shelved 1,159 volumes, books and music, and there are 396 phonograph records, the entire cost being about $1,200.

The *Stillwater Public Library*, at Stillwater, has 150 books on music, a Victrola, and 75 records, but no printed music. When operas are given in the neighboring city of St. Paul, the Stillwater library offers special lectures on the operas to be given. Both these lectures and the Sunday afternoon Victrola concerts at the library are popular.

A somewhat similar plan is followed at the *Virginia Public Library*, Virginia. There are 115 books on music, two Victrolas, and 250 records. A Victrola concert, with a 1-hour program, is given each Sunday and holiday, the programs

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being published in the two daily papers. A recommendation has been made to introduce a music collection.

The *State Normal School Library at Winona* has 100 books on music, 200 bound volumes of music, and over 1,000 unbound pieces. In addition are 50 player-piano rolls and 125 phonograph records. This material has cost about $2,000, and $150 annually is spent for music, $25 for books on music, and $25 for rolls and records. These sums are deemed insufficient, $500 being suggested as the ideal yearly appropriation to meet the needs of the case. Special attention has been paid to the field of folk song and music education in the public schools.

MISSISSIPPI.

Four libraries from this State report music collections, two of 25 books on music and two of 50. One has 75 bound volumes of music, another 1,000 unbound pieces of music and 24 phonograph records. There seems to be an almost total lack of music-section statistics or interest.

MISSOURI.

Ten Missouri libraries report music sections. Two have 50 books each on music, three 90, two 300, one 400, and one 1,500. Two have 25 volumes each of bound music books, one 200, one 870, one 1,000 (evidently chorus books are included), and one 3,903. One library has 3,500 player-piano rolls, another 600, another 30; there is no mention of phonographs. Little statistical information regarding expenses and appropriations is given beyond that itemized below.

The *Public Library of Kansas City* has 1,200 books on music, not including musical biography. There are 870 bound volumes of music, no unbound pieces, and 600 player-piano rolls, while 30 orchestral scores are listed. The collection is strongest in vocal scores of operas and books on music. There is no division into a music section, so separate figures are not available. Interest in the collection is reported increasing.

In the library of *William Jewell College*, at Liberty, is a collection of probably 350 volumes of hymns and books on hymn writers, largely assembled by the late Rev. C. H. Spurgeon, of England, whose private library is now in this college.

The annual reports and monthly bulletins of the *St. Louis Public Library* indicate special attention to the music section. The reports contain valuable suggestions to librarians, especially with regard to the handling of music-roll circulation, while the monthly bulletins are illuminated by occasional well-chosen notes regarding books or music. Evidently music is not treated in a perfunctory way in this library. There are now 300 books on music and 3,903 bound volumes of music, with no unbound pieces. The policy is to buy collections of printed music in general preference to single pieces; 3,500 pianola rolls have been acquired by donation. Miniature orchestral scores are the only kind purchased, and of these the library now has 124. There are 102 works of chamber music. Vocal scores of operas, songs, piano, violin, and church music are the fields most strongly represented. The collection is intended for general and popular use, and only incidentally affords research facilities. The card catalogue presents a thorough analysis of collections; the reports and bulletins have already been mentioned. In addition special publicity is accorded the music section in newspaper and other mediums. The expenditure to date is $5,000. The annual outlay for music, from library funds proper, is $500 to $1,000. Books on music are bought with other books, and no separate account

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is kept. The interest is increasing, with a music circulation of 4,565 last year, and no record of books on music. The size and character of the collection is not regarded as sufficient, and though it possibly meets the demands of the community, the library does not believe it meets the needs; $2,000 would be an ideal annual sum to spend on music and books on music. Music amounts to 0.23 per cent of the total circulation; no separate record is kept of the books on music, and the rolls figure 1.06 per cent of the total circulation. Interlibrary loans include music, and traveling libraries are furnished, but music is seldom included.

MONTANA.

As is the case with some other States, music library statistics from Montana seem difficult to obtain, but the average music section in Montana is by no means neglected. Eight libraries report musical collections. One has 25 books on music; three between 30 and 60; one 95; and one each 150, 400, and 500 volumes. Three have not over 25 bound volumes of music, and one 55. Phonographs and player pianos are not mentioned.

The *Public Library at Helena* is just starting the music section. It has 400 books on music and 55 bound volumes of music. A mimeographed list includes some of the latest and best publications, and is a useful part of a publicity scheme. There has been spent on the collection $1,200, and no fixed sum is appropriated for annual increase.

NEBRASKA.

So far as the libraries are concerned, there seems to be little enthusiasm for music in Nebraska. Eleven libraries report music sections, and eight of these have not over 50 books on music. One library has 260 volumes, another 350, and another 500. Four libraries have bound volumes of music, but the largest collection is 80 volumes. Statistical figures are almost entirely lacking.

The *Omaha Public Library* has 500 books on music, 50 bound volumes of music, and 50 unbound pieces. The collection seems to be due largely to the musicians of the city, for the money spent on it has been given by the various musical organizations. A fair proportion of these sums has been devoted to the purchase of books and opera scores too expensive to be acquired by the average book borrower.

NEVADA.

One report from this State comes from the library of the *University of Nevada* at Reno, and the sum total of the information transmitted is "Our music shelf is about 6 feet long." The other report, from the *Reno Free Public Library*, reports 100 books on music and 30 bound volumes of music, but the library feels that $150 annually would be well invested in the music section.

NEW HAMPSHIRE.

Items reported.	Number of libraries reporting—							
	1-25	26-49	50-75	100	230	500	800	1,800
Books on music	11	2	2	5	.....	2	1	.....
Bound volumes of music	6	2	1	.....	2	.....	.....	1
Separate pieces	.....	.....	.....	.....	.....	1	.....	.....
Phonograph records	.....	1	.....	.....	.....	.....	.....	.....

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From New Hampshire 24 libraries report music sections with collections of the size tabulated herewith. No player-piano rolls are reported, likewise no orchestral scores or chamber music. Four annual expenditures for music departments are given—$25, $45, and two of $50. Increasing interest is reported from five libraries, stationary one, and variable one.

The music section is an innovation of the last three or four years in the *Public Library at Manchester*, but it appears to be making a promising beginning. The collection now includes 500 books on music (66 of these are librettos), 230 bound volumes of music, and 515 separate pieces. Newspaper publicity is used for accessions. On the collection $700 has been spent, and the annual outlay for music and books is, respectively, $50 and $25. Interest is increasing, and the library would like to spend $400 annually on music and books, with preference to the music.

The *Public Library of Rochester* reports the demands on the music section largely due to the influence of the music teachers, and that a larger music library would be installed if funds were available. The present collection is 114 books on music, with no music, rolls, or records.

NEW JERSEY.

Items reported.	Number of libraries reporting—											
	1–25	26–50	75–100	150–200	250–350	500	750	1,000–1,200	1,800–2,000	2,900	3,700	5,800
Books on music	8	7	5	2	3	1	1	2	1	.....	.....	.....
Bound volumes of music	4	.....	1	3	.....	.....	.....	1	1	1	.....	.....
Separate pieces	2	.....	.....	1	.....	.....	.....	1	.....	.....	1	1
Scores	2	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chamber music works	2	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....

New Jersey is another State in which the libraries confine themselves strictly to books and printed music. No rolls or records are mentioned in the reports from 31 libraries, though these are rather above the average size. Six say the interest is increasing, 3 stationary, and no decrease is reported. One library has an annual expense of $65 and another $100 for music, while two spend from $20 to $50 a year for books on music. Beyond these figures little is reported in the way of annual expense.

Church music is the special field of the library of *Drew Theological Seminary*, at Madison. An endowment fund provides $50 annually for the purchase of books on hymnology; 750 books on music and 2,000 bound volumes of music are now in the library, hymnals being in the ascendancy.

The *Newark Free Public Library*, at Newark, catalogues its songs both by title and first line, and this unique index includes some 15,000 cards. There are 900 books on music, exclusive of individual biographies of musicians, 2,900 bound volumes of music, and about 5,800 part songs. As yet not much has been done toward the acquisition of full scores, piano arrangements being deemed more desirable for the present, but there are 200 titles in the chamber music collection. The largest factors in the music collection are songs, piano music, and chamber music. The library favors the publication of short lists and circulars to interest the average reader and music student, and has produced some clever features in this way. Newspaper publicity is also used. It is the policy of the library to bulletin local and New York musical affairs of importance, and to feature special magazine articles on music. A rough estimate of the expenditure on the music section is $1,500, and about $100 annually is

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spent in this department. The average yearly circulation is 5,000 volumes, with increasing interest. The library would like to spend $200 a year on the music section, with an extra $300 for development plans and advertising. Two books on music circulate to one volume of music.

The finding list for the music library of *Princeton University*, at Princeton, is a bound volume of 93 pages, published in 1909. It is issued in "title-a-line" form, pending the preparation of a full printed catalogue which will eventually be incorporated into the general finding list of the university library. The collection of books on music numbers about 1,800 titles, bound volumes of music 1,100 titles, and there are about 3,700 unbound pieces of music. Orchestral scores total 95 volumes, chamer music works 12 volumes. Between $2,000 and $3,000 is the estimated expense of the collection, in addition to generous gifts. The annual outlay for music and books on music is $65 from the library fund proper. Interest in the music library is increasing, and a professorship in music has recently been created in the university.

NEW MEXICO.

The two reports from New Mexico libraries are distinguished by their brevity. One library has 10 books on music, but believes a music department would be well patronized if a music fund were created. The other library has 35 entries under music headings, which are regarded as sufficient for general reference purposes.

NEW YORK.

Items reported.	Number of libraries reporting—								
	1-25	26-49	50-99	100-149	150-200	300-500	600-800	1,000	Over 1,000
Books on music	31	11	15	8	8	9	3	.....	9
Bound volumes of music	13	4	3	1	1	4	1	2	7
Separate pieces	.....	4	1	1	1	.....	.....	.....	6
Player-piano rolls	.....	1	.....	1	3	2	.....	.....	.....
Phonograph records	.....	1	2	2	1	.....	1	.....	.....
Orchestral scores	1	5	2	3	.....	.....	.....	1	1
Chamber music works	.....	1	.....	2	1	2	.....	.....	.....

Items reported.	Number of libraries reporting—											
	$1-$25	$26-$49	$50	$75	$100	$125	$150	$175	$200	$500	$600	Over $1,000
Aquisition cost	1	.....	2	1	.....	2	1	.....	.....	2	.....	6
Annual expense for—												
Music	1	1	.....	[1]2	.....	1	1	1	[1]1	1	[1]1	.....
Books on music	2	.....	2	.....	4	.....	.....	.....	.....	.....	.....	.....
Rolls and records	.....	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	.....
Library fund appropriation	.....	.....	1	.....	1	.....	.....	.....	.....	1	.....	.....
Endowment fund appropriation	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Special funds	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....
Ideal appropriation	4	.....	1	.....	1	.....	.....	.....	2	2	.....	1

[1] Includes music, books, rolls, and records.

New York State, with 326 libraries of 5,000 volumes or more, is second only to Massachusetts, with its 343 such collections. Music sections are reported by 104 libraries, and the collation of the reports brings to light some interesting points. Over one-half would be classed as small musical collections, the middle

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ground is rather sparsely filled, and there are some magnificent collections. Seven libraries report player-piano rolls, and the same number provide phonograph records. Orchestral scores are fairly plentiful, but chamber music is not so well represented. Only eight libraries report considerable acquisitions by gift, and not one reports interest in the suggestions of music dealers or publishers. Comparatively few libraries have annual appropriations for the music section, and these are relatively small sums; 21 libraries report increasing interest, 14 stationary, and none a decrease; 17 libraries believe their reports do not represent the community's interest in music, while 5 report affirmatively; 14 believe the music department expenditures inadequate, 21 are content with the past record, 11 think the demands of the community exceed the libraries' musical resources, 19 take the opposite view. The ideal annual appropriation for music, if mentioned, is usually small; one library considers $10,000 the ideal sum, and another wants "as much as we can get"; 20 libraries would add to books on music, 16 to the music, and only 2 would invest in more rolls or records. Six libraries have a piano in the library, 3 have player pianos, and 5 have phonographs. Five libraries have lectures or lecture-recitals under library auspices, and the lecturers, except in one instance, are paid.

Wells College Library, at Aurora, has 1,349 books on music, of which 348 are biographies and 828 bound volumes of music. Exactly 600 books are in foreign languages. There are 29 orchestral scores and 203 of chamber music. Five thousand three hundred and sixty dollars has been spent on the acquisition of the collection, and there have been many fine gifts. The annual appropriation, from library funds, is $400, which is regarded as sufficient for the needs of the institution. Suggestions for purchase are made by the college music department, and there is a preference for complete editions.

The *Public Library at Binghamton* has a total of 470 volumes of music and books on music. A neat booklet entitled "Music and Musicians" is the finding list up to 1917. Newspaper notices of new accessions are written by members of the library staff and include short descriptive notes. The cooperation of a local organist and teacher, Francis J. O'Conner, in the building of the collection is noted.

The *Public Library of Brooklyn* has a new building in process of construction and expects to develop its collection "along definitely helpful lines" with the new facilities. The library now has about 1,500 books on music and 6,000 volumes of bound music. As separate statistics are not now kept for music, little can be said about the circulation, but interest is increasing, and during the musical season there are not sufficient copies of operas, etc., to meet the demand.

The *Public Library of Buffalo* has never been able to enter the field of music to any extent excepting to supply books on music. It has cared for and catalogued gifts of music and has purchased some items at patrons' request. The collection now includes more than 1,300 books on music, including many duplicates, more than 1,400 bound volumes of music, 138 pamphlet librettos, and 78 bound librettos. The unbound pieces of music number 2,925 titles, and include 23,200 pieces, counting each vocal and instrumental part and duplicates. Several musicians and musical associations have presented the library collections of music. There are 88 titles of orchestral scores and orchestral parts for 72 operas and oratorios. Chamber music works for three or more instruments number 11. The collection of violin music is preponderantly strong, songs, vocal scores of operas, and church music are also strong fields. The library is fully catalogued, special gifts are noticed in annual reports, publicity is given through

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newspaper articles, and special lists are furnished for music festivals and musical evenings. Interest is increasing, and though the present collection may meet the demand of the library, it does not meet the demand of the community, and there is a great field to be developed if means were provided. The library regards the demand for books as the first consideration.

The library of *Canisius College*, Buffalo, is of a private rather than a public nature. It is a fairly extensive collection of works in almost every field of music, particularly strong in church music and music for orchestra, with a rather complete collection of standard hymnals.

The music division of the *New York City Public Library* is well described in three articles furnished by the library.

The music division of the New York Public Library consists of two separate parts. The first part is the Joseph W. Drexel collection, privately founded in 1858 by Mr. Drexel, of Philadelphia, by the purchase of a very complete and rich collection of music, books relating to music, autographs of famous musicians, portraits, etc., which had been the property of Mr. H. F. Albrecht, member of the Germanic Musical Society, who spent over 13 years (1845–1858) in various countries, busy with the formation of this collection. Later on the collection was enlarged by the addition of the music library of Dr. R. La Roche, consisting of works in English and French; also rare books in Latin and Greek languages, and also by the importation of books from Europe, especially Dr. Edward Rimbault's library, from which several important works were purchased by Mr. Drexel in London at an auction. Thus this collection came to contain musical writings from the sixteenth, seventeenth, and eighteenth centuries in German, English, French,. Italian, Spanish, and Dutch, including the history of music, the biography of celebrated musicians, dictionaries of music, the theory of musical composition, instruction books for voice and instruments, works on acoustics or the science of sound, essays on musical expression, musical journals, reports and contributions of musical societies, almanacs, descriptions of musical festivals, musical travels, musical novels, etc. The total collection was presented to the Lenox Library by Mr. Drexel in 1888 and was transferred with the Lenox Library to the new building at Fifth Avenue and Forty-second Street.

The second part of the music division is formed by the books and practical music formerly in the Astor and Lenox Libraries, some of these books are duplicates or different editions of works contained in the Drexel collection, but the larger parts consist of literature and music from about 1850 up to date, formed by steady purchases by the library administration and by gifts from various persons.—*Edward Silsky, on "The Music Division of the N. Y. Pub. Library,"* in *Proc. Music Teacher's Nat. Assoc., 1914, No. 9, pp. 211–212.*

While the Lenox Library's chief interest as a music library lay in the Drexel collection, it did not refrain entirely from adding to its shelves a few books on music and important compositions published after Mr. Drexel's death. At the same time the Astor Library was buying such music and books on music as it believed were very important, like the Paléographie Musicale, some of the publications of the Plainsong and Mediæval Society, Eitner's Publikationen alterer Musikwerke, Maldeghem's Tresor Musical, and the Denkmäler deutscher Tonkunst; also many of the complete editions of the classic masters and some important files of American and European musical periodicals. One of the most important purchases was made in 1896, when the New York Public Library bought a collection of Italian opera librettos, a few of which date back to the end of the seventeenth century. Those of the eighteenth century are more numerous, and the rest run along well into the nineteenth century. The most interesting single group in the collection contains 693 librettos of the operas and ballets performed at the two royal theaters in Naples between 1821 and 1865. The whole libretto collection embraces 134 volumes, containing in all 1,408 librettos, of which 367 are before 1800. An interesting supplement to the librettos was purchased at the same time; 20 bound volumes of daily programs giving the title and cast of the opera, ballet, or play to be performed in each of the 10 or more theaters of Naples each day from 1839 to 1859.

The Astor and Lenox collections were united in the Lenox building in 1898 and were transferred to the new building at Fifth Avenue and Forty-second Street in 1911. The present music division, thus established, could point to a

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library of musical books which contain, besides the Drexel collection, a complement to this collection quite as large again as the original bequest, and which, although by no means complete, or anywhere near complete, not even as nearly complete as one would expect in a city which devotes as much of its time and money to music as New York does, affords nevertheless some opportunity for the serious study of musical literature, and furnishes a sound basis for a future expansion which will bring the collection up to a standard which may adequately satisfy the needs of a city like New York.—*O. Kinkeldey, on "The N. Y. Pub. Library and its Music Division," in Lib. Jour., vol. 40, No. 8, pp. 591–592.*

The New York Public Library has just received [1914] a very valuable gift for its musical department in the Julian Edwards collection of music scores and books.

The Julian Edwards collection * * * consists of 90 full scores of operas, 150 full scores of cantatas, concertos, oratorios, overtures, suites, etc.; 800 vocal scores, and about 325 books on music, musical instruments, composers, etc.

The strength of the whole collection [i. e., the music division] is, therefore, mainly historical, and the books on the shelves have served as the source for extended and steadily increasing investigations, but the limited appropriations for the music division have enabled it to do little toward providing investigators with the music publications of the last 50 years.—*Esther Singleton, in N. Y. Tribune, Nov. 8, 1914.*

Taking up the report of the reference department of the New York Public Library first, there are now in the collection 12,400 books on music, 7,079 bound volumes of music, and 4,105 unbound pieces of music. Four librarians give their entire time to the music section. Following the policy of purchasing orchestral scores, about 1,000 have now been acquired. The general collection is fairly well balanced throughout, specially rich in old music and vocal scores of operas. Scholars are offered a field for research in the Drexel collection relating to the sixteenth and seventeenth centuries. The annual outlay for music and books on music is $600, from library funds proper. Interest is increasing; the average use of the music section for five years from 1912 is 13,234 readers and 36,198 volumes, and this is in the reference department as distinct from the circulation department. Music and books on music are equally popular; $10,000 is regarded as the ideal sum for the annual purchase of these two items, for the present size of the collection and appropriation are deemed insufficient.

The 44 branches of the New York Public Library each have music collections of varying sizes; 5.000 books on music and 13,000 bound volumes of music are thus disposed, with 35 miniature orchestral scores and 125 chamber music works. The general collection of books on music is strongest; then follow piano music and opera. The interest is increasing; in 1916, 57,470 volumes of music were circulated.

At the *Columbia University Library* in New York City are found 6,500 books on music, 1,500 bound volumes of music, 3,000 unbound pieces of music, and 100 player-piano rolls; 2,000 orchestral scores are listed, as the strongest single feature of the library; these are purchased in preference to pianoforte arrangements. The library is also strong in vocal scores of operas, and has 100 chamber music works. Catalogue, bulletins, newspaper notices. and programs are used as publicity mediums. About $15,000 has been spent on the collection, and there is a music-department fund of $150 annually for music and $50 for books on music. About 2,500 persons annually use the collection, and the interest is increasing. The library does not feel that the sums available are enough to supply the demand, even in view of the proximity of other libraries, and would gladly see the appropriations much increased. If this were the case music would have preference over books, for two music titles are called for to one book on music.

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The *Institute of Musical Art*, 120 Claremont Avenue, New York City, has both a reference and circulating library. In the former are 1,710 books on music and 766 bound volumes of music; in the latter 828 bound volumes of music and 13,769 unbound pieces of music. The circulating library was founded by G. Schirmer about 1872, and donated by Mr. Rudolph E. Schirmer to the Institute in 1905. There are few orchestral scores, but 540 chamber-music compositions. No annual appropriations are made, and there are no library funds. Interest is increasing, and in 1917 there were 3,600 actual users of the library. Students and others may avail themselves of the library privilege upon the payment of a small annual fee.

The *Metropolitan Museum of Art*, in New York City, has a remarkable collection of musical instruments, but no collection of music. In the library of the museum there are about 200 volumes relating to instruments. There is no way of determining how many persons make use of the books of reference. The catalogue of keyboard musical instruments in the Crosby Brown collection, published in 1903, is a handsome volume of 313 pages, with valuable comment and remarks, and many excellent illustrations. The price of this book is $1. A complete rearrangement and revision of the catalogues of the Crosby Brown collection of musical instruments is now in progress, and the completed work will be published in four volumes. Of these Volume II is now published. It is by Miss Frances Morris, assistant curator in the department of decorative arts. Finely illustrated and profusely annotated, this book of 333 pages (50 cents) is one of the most interesting catalogues imaginable.

The *New York Institute for the Education of the Blind*, 412 Ninth Avenue, New York City, has 300 books on music in ink print and 250 in New York point, with several thousand unbound pieces of music and 30 player-piano rolls. The collection of books is strong in the theory and practice of music, and the music collection in classic teaching pieces. In this school for blind boys and girls the effort is made to train to good taste as well as proficiency in music. No figures are available regarding expenses of the music library, which is considered sufficient for the purpose. About 500 persons use the library each year. This institution publishes much of the music in the New York point system used in the United States, and sells publications at cost to any blind people desiring them; 47 well-selected piano pieces and 3 organ pieces were put into New York point in 1916–17, at prices ranging from 3 to 21 cents each.

The *Hispanic Society of America*, in West One hundred and fifty-sixth Street, New York City, has rather an extensive collection of music, much of which is in old manuscripts and is liturgical in character. This has not yet been catalogued and made available for readers, but several important works on popular songs of Spain and Spanish America are available.

The *General Theological Seminary* in New York City has a fairly extensive collection of church music and other musical material of an ecclesiastical nature.

The *University of Rochester*, at Rochester, has the Sibley Musical Library, established in 1904 by Mr. Hiram W. Sibley, of Rochester. The catalogue and first supplement, bringing the list up to 1909, form a neat booklet of 132 pages, and a mimeographed list is dated 1912. Since then few books have been added, but collecting will be resumed when increased library facilities are afforded; 800 books on music and 1,200 bound volumes of music constitute the present collection. Two-hand piano arrangements of orchestral works are preferred to scores, of which latter there are 30. The collection of chamber music works is notably strong, 500; and there are many vocal scores of operas and books on the history of music. The estimated cost of the collection is $7,500.

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The interest is increasing, with 2,500 annual users of the library. For keeping the library up to the demand of the community, $300 annually is regarded as an ideal sum; and the preference would be to buy books on music, as this department has fewer recent accessions. The present use of music is 80 per cent, and books on music 20 per cent, of the music-section use. Note is made of the patronage of the collection by musical people of the city, despite an unfavorable location.

The *John Jermain Library*, at Sag Harbor, has a small collection of books on music, but interest seems to center around a newly-purchased victrola and collection of records. In a village of 3,000 the monthly circulation of records exceeds 400. Last winter the library engaged six lectures, the expense being met by the endowment fund.

At the *Public Library*, Syracuse, is a collection of 601 books on music and 1,081 bound volumes of music, with 20 orchestral scores. Vocal scores of operas, songs, and piano music are the preponderating features. The interest is increasing, and the library expects to add to the collection, especially in the line of music.

The *Public Library at Utica* has 500 books on music and about 500 bound volumes of music with 20 orchestral scores. New accessions are listed in the newspapers, and a general publicity scheme is followed. The annual expense is $175 for music and $105 for books on music. With slightly increasing interest, about 3,400 people used the music section last year. The nucleus of the collection was placed in the library by a local music club. In March, 1917, a special room was assigned to the music section and considerable addition to it is planned.

NORTH CAROLINA.

Nine North Carolina libraries report music sections. Five of these have not over 50 books on music; two have 100, and two have 200 each. Two libraries have 25 or less bound volumes of music, and one 50. One library has 75 phonograph records. It is encouraging to note that four of these libraries declare the appropriations for music and the resources of the library inadequate to the situation, and three report increasing interest. In no case is the annual outlay for music over $30, or for books on music over $25.

NORTH DAKOTA.

Two of the seven libraries in this State reporting music sections report increasing interest; three do not mention the subject. There are two collections of 50 books on music and two of 75. One library has 100 phonograph records. In general the subject of music does not seem to interest the libraries of the State.

At the *University of North Dakota* the combined libraries of the university and of the director of music, Grand Forks, include 500 books on music; 100 bound volumes of music; and 5,000 unbound pieces; also 50 pianola rolls, and 300 records. There are 30 orchestral and 5 chamber-music scores. So far about $2,500 has been spent on the collections, in which there is increasing interest, and which is used throughout the State by an interlibrary loan system.

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OHIO.

Items reported.	Number of libraries reporting—									
	1–25	26–49	50–75	100–150	200–250	400–550	600–700	900–1,100	1,600–2,000	2,500 and over.
Books on music	17	3	6	8	8	1	1	2	1	1
Bound volumes of music	4	.....	.....	3	1	4	1	.....	1	.....
Separate pieces	.....	1	1	.....	.....	.....	.....	1	.....	3
Player-piano rolls	.....	.....	.....	.....	2	1	.....	.....	.....	.....
Phonograph records	.....	.....	1	1	.....	.....	.....	.....	.....	.....
Scores	2	.....	1	1	1	.....	.....	.....	.....	.....
Chamber music works	1	2	2	.....	.....	1	.....	.....	.....	.....

The average of music sections in Ohio libraries is encouraging. The general collections seem to be of fair proportions, though none can be placed among the great collections of the country. A rather unusual condition is that 16 libraries prefer to add books on music as compared to 11 which would add music. Eleven libraries consider their music department funds inadequate, and 12 libraries believe the department fails to meet the needs of the community. As ideal sums for the music section, two libraries suggest $25 annually, one $40 to $50, one each $100 and $400, two $300, two $500, while one library would like to have $750 for music and $250 for books on music. Increasing interest is reported by 14 libraries; 6 report stationary; 15 make use of special publicity for the music section in addition to catalogues and bulletins; 52 libraries in all have reported as having music sections.

In place of a more detailed report the reference department of the *Public Library of Cincinnati* has submitted the following statement:

The music collection in the Public Library of Cincinnati contains books on music, a few orchestra scores, a large number of piano arrangements of orchestral music, concertos, and chamber music; and a considerable library of choral music and part songs for men's voices, women's voices, and mixed voices. The large collection of choral music was acquired by gift from two choral societies and a musical club which presented their entire libraries to the public library. The collection of sheet music is selected to meet the demands of the patrons of the Cincinnati Symphony Orchestra concerts, the May musical festivals, and other artist concerts given in Cincinnati each year. As far as possible all compositions represented on these programs are added to the library and circulate in the same manner as books belonging to the library. The music rolls belonging to the collection were acquired by gift and include only good music; ragtime and undesirable compositions are not added to the collection. The policy of the library is to include in the collection of books on musical history and criticism practically all publications in English of real value on the subject.

The library of the *Cincinnati College of Music* has 300 books on music, 300 bound volumes of music, and 10,000 unbound pieces of music, with 200 orchestral and 300 chamber music scores. The acquisition cost is about $6,000, and the annual outlay $200 to $300, from an endowment fund; 500 users are reported, with increasing interest, and the library would like to spend $500 annually on music.

The music alcove in the *Public Library at Cleveland* has the entire attention of two librarians and a page, with occasional further assistance. There are 1,100 titles of books on music, with many duplicates, and 1,150 bound volumes of music, the total with duplicates being 1,600. Unbound sheet music only

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amounts to 75 pieces, and there are no rolls or records. There are few orchestral scores, as practically all the purchases so far are confined to piano arrangements, but 329 scores are deposited on loan. The library has 47 chamber music works. Special features are vocal scores of operas, oratorios, and cantatas, folk music, song albums, piano solos and duets, organ and violin music. Research work might be done in the collections of folk music and ballads. From $200 to $400 yearly is spent on music and books on music. About 4,600 persons use the music department annually. Interest is increasing, but the growth of the collection is so recent that comparatively few people have learned to depend on it as yet. Music rolls will be purchased only after full justice is done to the book and music collections. The borrowers of music are two to one book borrower. The collection is used considerably by music teachers, but more by music students and by amateur musicians, who use it for recreation, the two latter groups being about equally divided.

The *Elyria Library*, at Elyria, is situated so near to Oberlin and Cleveland that a large collection of music seems inadvisable, if it were practicable. The library has about 400 books on music, but no music. History, opera, and folk song are best represented. An effort is made to keep library patrons informed regarding musical progress.

The *Denison University Conservatory of Music* library, at Granville, has 900 books on music, 400 bound volumes of music, and about 3,000 unbound pieces, with 200 player-piano rolls and 50 records. A piano, player-piano, and phonograph are available in the library. An unusual feature is the presence of 30 primitive musical instruments. The main features of the book collection are works on opera and music up to the time of Bach. For the last 10 years at least $150 has been spent annually on music and $100 on books.

The *Oberlin College Library* at Oberlin has about 2,500 books on music, 500 bound volumes of music, 25,000 unbound pieces, 225 player-piano rolls, and 150 records. There are 125 orchestral scores and 75 chamber-music works. The outstanding feature of the library is the collection of books on the history of music. Next to this is musical biography and music for piano and voice. About $5,000 has been spent for books on music and $15,000 for music, the annual appropriations being $150 and $400, respectively, from library funds proper. Interest is increasing, and about 15,000 persons use the music collection annually. A larger collection seems warranted in view of the situation, and the library would like to spend $750 annually on music and $250 on the literature of music.

A collection of 500 player-piano rolls is found in the *Public Library at Toledo*. The books on music number 600 and bound volumes of music 150. Financial considerations prevent specializing in music for the present. Later it is hoped to make substantial increases in view of the circulaton of the present material.

OKLAHOMA.

Six libraries from this State report music sections. Three have collections of 25, 35, and 60 books on music, one 100, one 200, and the sixth somewhere between 500 and 1,000. The two more important reports are detailed below. In general, there appears to be more enthusiasm about music and music libraries than in many other States.

The library of the *State University of Oklahoma* at Norman has between 500 and 1,000 books on music, 109 bound volumes of music, about 50 unbound pieces, 50 player-piano (orchestrelle) rolls, and 300 Victrola records. Full scores number about 100, and additional purchasers are planned, pianoforte arrange-

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ments of each score being provided. There are about 50 chamber-music works. In addition to the two classes just mentioned, the library has good collections of vocal scores of operas and theoretical works. Opportunity is given for research work in primitive music. Few works have been acquired by gift, and the acquisition cost is about $3,000. Lately the annual expense for music has been about $500, books on music $200, and Victrola records about $300, and the library would gladly see this sum considerably enlarged. Interest is increasing, and a larger music section is confidently expected to bring a larger patronage.

The music collection in the *Carnegie Public Library at Shawnee* includes 25 books on music and 75 vocal scores of operas. Three music journals are on the subscription list. There is a piano in the library, and evidently a sincere interest in doing as much for music as finances will permit.

OREGON.

Five libraries from this State report music sections, and the State reports have the rather unusual distinction that no collection of less than 100 books on music are mentioned. One has 100 books, one 150, one 300, one 1,044. No library reports its musical collection adequate to the demand, three designate increasing interest, and three have special publicity arrangements.

There are 1,044 books on music (244 titles are duplicated), and 1,722 bound volumes of music in the *Library Association of Portland;* 45 miniature orchestral scores are listed among later additions. Eight-hand piano music is a rather unique specialty. The music section is promoted by talks to musical societies and before groups of teachers. The annual expense for books on music is $16.50, for music $270. The total outlay so far has been about $1,500. Music is represented by 60 per cent and books on music by 40 per cent of the music department circulation. Interest is reported as keen and increasing, and when more space is available for the music section great developments are expected. Special lists of music and books on music are mimeographed.

The *Oregon State Library*, at Salem, does not report on the regular form, but the librarian writes:

We do not have a regular musical department, but I thought you might be interested to know that we have very great demand for these books by music-study clubs throughout the State. They have been encouraged to follow the programs issued by the National Federation of Musical Clubs and other programs found in books like Elson's "Music Study Programs through All Nations."

They rent victrola records; so that they have the music and can go through the program, even if they have not the local talent. We are not able to keep up with the demand for books on music; it has been quite extraordinary during the last few years.

PENNSYLVANIA.

Items reported.	Number of libraries reporting—									
	1–25	26–49	50–75	100–150	175–200	225–300	400	500–700	1,000–2,000	Over 2,000.
Books on music	20	9	7	5	6	1	2	2	3	1
Bound volumes of music	5	3	4	.....	2	.....	.....	2	3	2
Separate pieces	1	.....	2	.....	.....	.....	1	.....	.....	.....
Player-piano rolls	.....	1	.....	.....	.....	.....	.....	.....	.....	.....
Phonograph records	.....	.....	1	.....	.....	1	.....	.....	.....	.....
Orchestral scores	.....	1	.....	.....	2	.....	1	.....	.....	.....
Chamber music works	.....	.....	.....	.....	.....	.....	[1]1	.....	[2]1	.....

[1] Chiefly miniature scores. [2] 1,200.

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The music sections of the 61 libraries in Pennsylvania reporting such departments may hardly be classed as remarkable in any one respect. Several large collections distinguish the list, and some items therein are worthy of special comment, but the summary of the State has comparatively no outstanding feature. Music-section expenses and appropriations are apparently seldom classified separately, and those mentioned seldom call for comment.

The *Public Library at Bloomsburg*, with 60 books on music and 65 bound volumes of music, uses newspaper notices for publicity, personal work with people at the shelves, and has special cooperation with one of the local music clubs and the school supervisors. The interest is increasing slowly, and would probably grow faster with a more adequate collection of music.

The *Bucknell Library of Crozer Theological Seminary*, at Chester, has 225 books on music and 200 bound volumes of music, all in the line of church music.

The American Sunday School Union, at 1816 Chestnut Street, Philadelphia, has a special collection of historical works on sacred and Sunday-school music and hymn books, some of them reputed to be quite rare. These are collated in special cases. They are not in a circulating library, but are for consultation only, free to teachers and students as far as is consistent with the proper preservation of the works.

The *Drexel Institute Library*, of Philadelphia, includes the Jarvis memorial collection, presented to it by the widow of the late Charles H. Jarvis. The library has about 200 books on music and 2,000 bound volumes of music. There are 400 orchestral and 1,200 chamber-music scores. A condition of the Jarvis gift was that the music be used for reference only, and since this restriction has been in effect the use of the music section has somewhat decreased.

The *Free Library of Philadelphia* has 1,240 books on music, 142 bound volumes of magazines, and about 2,500 bound volumes of music. There are 160 orchestral scores, but usually piano arrangements of orchestral works are bought in preference to the scores. The strong points of the collection are the books on music, vocal scores of operas and oratorios, and piano arrangements. Thus far $5,500 has been spent on the collection, and there is an annual expense from an endowment fund of $300 for music and books on music. The interest is increasing. No count is kept of actual users. The circulation during 1916 was 8,469 volumes, 75 per cent of which was music and 25 per cent books on music. The library does not consider the collection adequate to the situation, and would add both books and music. Lectures and lecture recitals are given under library auspices.

Early Pennsylvania music, both manuscript and printed, is found in the library of the *Historical Society of Pennsylvania* at Philadelphia. It has all accrued by gift.

The Library Co. of Philadelphia makes this report:

> This library has really a very fine collection of music and books relating to music, particularly church music, having inherited the collection of the late Dr. Albert G. Emerick. Poverty has so far prevented a proper arrangement and cataloguing of this collection. It is hoped that at some time in the future the library will be able to revise their musical collection and put it in such shape as to show what it consists of and how it can be best used.

The *Carnegie Library of Pittsburgh* has 7,000 books on music and 1,400 bound volumes of music, with 175 orchestral scores and 400 chamber music scores, both of the latter class chiefly in miniature form. The library is a general collection, strong in no especial field. All the usual means of publicity are used and, in addition, personal letters are sent to musicians upon occasion. No separate record is

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kept of book expenses, but the scores represent an outlay of $1,200. Patrons show an increasing interest in the music section, and $500 annually could well be spent on music and books. No lectures or recitals are given directly under library auspices, but in the same building Mr. Charles Heinroth, the municipally supported city organist, gives biweekly organ recitals.

The *Carnegie Free Library of Allegheny, North Side, Pittsburgh*, has 2,000 books on music and 1,750 bound volumes of music. Vocal and piano music are the predominating features of the music collection, which has been largely acquired by gift. About 3,000 people use the collection annually, but the interest is stationary. An ideal sum for yearly purchases would be $250, and music would be bought in preference to books. In the music hall of this library building free organ recitals are given weekly by the north-side city organist, Mr. Caspar P. Koch.

The library of the *Western Theological Seminary, Pittsburgh*, has acquired the collection made by the late James Warrington, of Philadelphia. It includes 1,300 books on music, about 3,500 bound volumes, and 400 unbound pieces. Church and folk music are almost the sole features of this library. Owing to the recent acquisition of this collection, it has not yet come into general use.

The *Public Library at Pottsville* has but a small collection of books on music and of music, but reports a demand for more material and a prospect of greater activity in a musical way. A recent request for more books on harmony and counterpoint came from a member of the mounted State police force.

RHODE ISLAND.

Items reported.	Number of libraries reporting—								
	1–25	26–49	50–75	100–125	150	300	850	1,044	5,967
Books on music	6	2	3	1	2	1	1	1	.....
Bound volumes of music	2	1	.....	.....	.....	.....	.....	.....	.....
Separate pieces	.....	.....	.....	.....	.....	.....	.....	.....	[1] 1
Phonograph records	.....	.....	1	.....	.....	.....	.....	.....	.....

[1] Includes bound volumes and separately bound pieces

The striking feature of the reports from 16 Rhode Island libraries with music sections is the almost total lack, except in one case, of any resources except books on music. No player-piano rolls are mentioned, and 50 phonograph records is the total library collection for the State. Three libraries together have less than 100 bound volumes of music, and only one has any considerable amount of music. So far as books on music are concerned, the average is quite creditable. Scores and chamber music works are scarce, and so are figures regarding music department finances.

The *Public Library at Providence* has been fortunate in the reception of gifts to the music section. Several musicians and teachers have left their entire collections to the library, and the outlay of the music department has been correspondingly small. In the collection are 1,044 books on music, and 5,967 bound volumes and pieces of music, the latter being invariably provided with a cover. The field of piano music has preponderant representation. Figures for music department outlays are not kept separately. Interest in music is decidedly increasing; in 1916, 3,770 pieces of music and 900 books on music were circulated. The demands of the community are not met by the collection, and additions of music are preferred to those of books on music.

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SOUTH CAROLINA.

Six libraries in this State report music sections, but not one gives any detailed information. One reports "a very few books on music," another "a few books on music," another "about 11," the fourth "about 35."

The *Carnegie Library of Winthrop Normal and Industrial College*, at Rock Hill, says: "We have a general library of 20,000 volumes. Of these several hundred are on music. They are used a good deal by the students of the college who are in the music department."

SOUTH DAKOTA.

Items reported.	Number of libraries reporting—								
	1–25	26–49	50–60	75	100	200	350–400	500	600
Books on music	2	2	1	2	1	1	1		
Bound volumes of music									1
Player-piano rolls								1	
Phonograph records			1				1		
Orchestral scores						1			
Chamber-music works					1				

Ten libraries from South Dakota report music sections. Not one has separate pieces of sheet music and only three have rolls or records. Three report increasing interest, none stationary or decreasing. Books on music are preferred, in the way of new additions, by three libraries, while only one favors more music.

The *Carnegie Free Public Library at Sioux Falls* has 200 books on music. Interest is increasing, and about 550 persons annually make use of the collection. Compared to the other divisions of the library, the music collection is sufficient, but the library would add both music, books on music, and phonograph records if circumstances permitted.

The library of the *University of South Dakota*, at Vermillion, has 400 books on music, 600 bound volumes of music, 500 player rolls, and 350 phonograph records. The policy is to purchase material that will be of the greatest help to students of the university and the community. To date about $3,000 has been spent, and the annual outlay is $100 for music, $100 for books on music, and $50 for rolls and records—all this from library funds. About 800 users are numbered annually, and the interest is increasing. Readers have the use of piano, player piano, and phonograph in the library. There are 200 orchestral scores and 100 chamber-music works. The collections of operas (vocal scores) and piano and chamber music are the leading features. Complete works of some composers have been acquired and the standard song composers are well represented.

TENNESSEE.

Reports have been received from five libraries with music sections. The number of books on music is given as 25, 75, 150, 250, and 400. One library reports 3,000 bound volumes of music, but as it is a school library, probably a large part of that number are vocal scores for chorus use. Two libraries have each not over 50 bound volumes of music and one 138. No rolls are reported and only one small collection of 25 phonograph records. Increasing interest is mentioned twice and stationary once.

The *Carnegie Library at Nashville* has 400 books on music and 35 bound volumes of music. Nearly all of this material has been purchased, part of it

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on suggestions from music clubs. The expense has been so far about $1,000, of late years about $25 annually. Interest is increasing, and the average number of actual users of the music section is about 500. The sums which the library has been able to spend on music "emphatically do not" meet the demands of the community, especially in the way of music which the library would gladly have for the development of taste. It is the hope of this library to greatly extend its musical activities when funds will permit.

TEXAS.

The summary of reports from 14 music sections in Texas libraries is quite encouraging. Four libraries have 25 books on music, one 50, five 100, one 200, one 300, one 335, and one 450. Two have 25 bound volumes of music, one 75, one 100, one 125, and one 165. Only one reports unbound sheet music, about 100 pieces, and one has 50 phonograph records. Six report increasing interest in music and eight are noncommittal. Four believe the present resources of the music sections inadequate.

The *Dallas Public Library* has about 300 books on music and hopes soon to add both rolls and sheet music. In addition to newspaper notices of accessions, special attention is given to music-study clubs. The interest is increasing, and in 1916–17 music was responsible for a large share of the 32,000 books circulated from the class of fine arts.

The *Rosenberg Library at Galveston* has occasional lectures on music by paid speakers. Its collection of 335 books on music and 165 bound volumes of music is intended for general use, and no detailed figures of expense or circulation are available. Music was the special subject of the bulletin for January, 1912, which contains some helpful notes for the inauguration of such collections for general readers.

The *Carnegie Library at San Antonio* has 450 books on music and about 100 bound volumes of music, with 70 orchestral scores. The interest is increasing, but the library's music collection does not meet the demands of the community. The music section circulation makes up about 4 per cent of nonfiction.

UTAH.

The situation in this State does not indicate particular interest or enthusiasm, judging from the reports of four libraries with music sections. They have 25, 125, 350, and 426 books on music. One has 500 unbound pieces of music, 10 orchestral scores, and 70 numbers of chamber music. No comment is made as to whether interest is stationary or changing, and no financial statistics of any kind are given.

VERMONT.

Reports have been received from 11 libraries with music sections. Five of these have not over 25 books on music, one 30, one 50, one 106, and one 135. Four have not over 50 bound volumes of music, one 70, one 107, and one 257. One library (a State normal school) has 2,100 unbound pieces of music and 72 phonograph records—the only report of rolls or records in the State. Six libraries report increasing interest in music; one stationary. Four think their music collections and the funds appropriated inadequate to the needs of the community. Four would add to the present supply of music, three to books on music, and one would buy more phonograph records if funds would permit.

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VIRGINIA.

In some States few libraries seem able to give any particulars of the music section or its activities, and this condition seems to be characteristic of Virginia libraries. Six have reported, but altogether very few questions are answered. Three libraries have 25 or fewer books on music, one 150, one 300, and one 500. One library has 125 bound volumes of music and 776 unbound pieces. One reports increasing interest and one stationary. No figures are returned in answer to the questions on finance, except that one library would like a music section allowance of $50 annually.

WASHINGTON.

Pacific Coast States usually report a fair share of attention to music departments, and Washington is no exception. Twelve libraries specify music sections, with the following numbers of books on music: 25, 40, 55 (two), 80, 215, 229, 350, 600, and 971. Three libraries have bound volumes of music—120, 189, and 1,909, while one has 860 unbound pieces of music. One has 58 orchestral scores, another 81, while one library reports 500 chamber-music works. One spends $150 to $300 annually on the music-section purchases. Four believe their collections inadequate for the community. Three believe interest in music increasing; the others make no comment.

The general work of the *Washington State Traveling Library, at Olympia*, has until recently been hampered by lack of funds. Last year a rather liberal appropriation was made by the legislature, and it is expected that the music section will be considerably augmented at an early date. Now there are only 215 volumes classified in the music list. These are loaned to clubs, schools, teachers, and individuals. The superintendent, herself a musician of considerable experience, selects the material and gives personal assistance to its choice in answer to requests.

The *Public Library at Seattle* has 971 books on music, 1,909 bound volumes of music, and 860 separate pieces, with 81 miniature orchestral scores and 500 chamber music works. The books are strong in history and biography, while piano and vocal music are well represented in the music class. In addition to the usual means for publicity, this library has a bulletin board for notices of musical affairs, posters calling attention to special collections, and a shelf for new music. The collection has cost about $4,000, exclusive of binding. There is an annual appropriation of $150 from the library funds, but from $150 to $300 is spent on music and an undetermined sum for books on music. The library would like to spend $1,000 a year once and $600 subsequently buying music and books on music, but not adding rolls or records till needs in these lines were met. The interest is increasing, though the number of users of the music section is not kept. The circulation figure alone for 1917 was 10,823. Of this, 40 per cent was books on music and 60 per cent music. Mention is made of the use of this collection by the professional musicians of the city.

WEST VIRGINIA.

This is another State where librarians are disposed to be noncommittal regarding the music sections. Four libraries report some collection—one each of 25, 60, 75, and 300 books on music. One has 25 bound volumes of music and another 145, while one has between 600 and 700 separate pieces of music. One has 50, another 200 phonograph records. With this information the reports are practically at an end.

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WISCONSIN.

Examination of the summary of 39 libraries reporting music sections indicates that Wisconsin is fairly well provided with small collections, but lacks any of notable size. Six libraries report increasing interest in music, four stationary, and one decreasing on account of war effects. Four librarians consider their collection sufficient for the musical interest of the community, and four do not; seven believe the present outlay (which, as reported, is always small) sufficient, while six would welcome larger music funds. Thirteen libraries use special means of publicity for the music section.

The *Kellogg Public Library, at Green Bay*, has over 200 books on music and 50 bound volumes of music. Lack of funds has prevented further purchases in this line, but the present material is much used by teachers, students, and others. Both newspaper and bulletin publicity is used for the music section.

The book selection and study club department of the *Wisconsin Library Commission, at Madison*, has about 200 books on music and 10 bound volumes of music. This material is sent out to clubs studying music according to a definite outline, often furnished by the library; or in answer to definite requests for information.

WYOMING.

The single report from this State is that the State Library at Cheyenne has 30 books on music, all acquired by purchase, and included with the general collection.

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APPENDIX.

MUSIC IN OUR LIBRARIES.

(Excerpts from an article by O. G. Sonneck. Reprinted, by permission, from The Art World.)

Poets and other generous souls have extolled the charms of music until the emotional superiority of music over other arts has become a dogma too venerable for doubt. Possibly the emotional appeal of music is more intense than that of other arts, but the account is squared by several obstructions in the path of that appeal. Chief among these (with all the inherent consequences) is the inordinately complex and costly apparatus required for the performance of musical works in the larger forms, such as symphonies, oratorios, operas. The composer faces a second disadvantage in the necessity of recording his thoughts with the help of symbols which can reach the sense appealed to, the ear, only by way of another sense, the eye. Furthermore, comparatively few music lovers possess the imagination or the training to transform such visual impressions into the corresponding aural impressions. The accomplishment of "reading the score" of a modern opera, for instance, is an accomplishment indeed, and of truly deterring difficulty. Yet on this very accomplishment of those interested in him every composer sooner or later depends for his intercourse with contemporaries or posterity whenever the performer, the intermediary between composer and public, chooses not to perform a composer's works.

A minimum of reflection will show how, under the circumstances, without the hospitality of libraries composers are in danger of being shut off from posterity. But there his musical thoughts lie practically buried alive, encapsuled in books of mute hieroglyphics. It is the best the world can offer him until that time when we shall have not merely musical libraries but "museums" of music, where in sundry feasible ways the public appeal of works of musical art will be made to endure, in effect similar to the permanent and ever-direct appeal of paintings, sculptures, etc., in museums of the fine arts. A fantastic dream? Not at all.

If works of musical art, then, must fall back gradually on the hospitality of libraries—from the very nature of music virtually the hospitality of a mausoleum—has the best been made of the situation? Hardly. Musical libraries that are reasonably representative of the mighty growth of musical culture in our country, culture that springs from tender but healthy roots 200 years old, are too few and far between to suggest a different answer. Perhaps the librarian profession still hesitates to recognize in music intellectual elements not less worthy of attention than genealogy or fiction. Perhaps we suffer from a dearth of expert musical librarians whose authority might compel a more hospitable attitude of mind. Perhaps musicians and music lovers in musical communities are still too indifferent or too unaware of their power of concerted action to have the rights of music as a cultural and therewith civic factor more adequately respected in libraries. Perhaps American libraries are richer in good will than in funds; perhaps the cost of music, comparatively much greater than that of literature, works as a handicap. Whatever the reason or reasons, the fact remains that music is deplorably underfed in the great majority of our libraries. Otherwise cities like New York, Philadelphia, Chicago, St. Louis, Cincinnati, San Francisco, Minneapolis and half a dozen others of our musical centers would not lag so far behind Boston in the possession of a municipal musical library of which all citizens may feel proud. They would not be able to emulate certain unique features of the late Mr. Allen A. Brown's munificent gift to the city of Boston; but if they had started in time and had persevered, they would now, as they ought, possess musical collections fairly equal to his in extent and merit.

In any ambitious community a library without the complete works of Shakespeare, Goethe, Dickens, Ibsen, Molière, Balzac, Dante, Longfellow, Poe, or with-

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out various serial works published to embrace a comprehensive selection of representatives and historically important literary masterpieces, such as Johnson's 75-volume edition of English writers, would very properly invite scornful criticism. Apply a similar test with reference to the great masters of music. Does your local library contain the more or less complete editions of the works of Palestrina, Orlando di Lasso, Bach, Händel, Purcell, Rameau, Grétry, Haydn, Mozart, Beethoven, Schubert, Schumann, Mendelssohn, Berlioz, Liszt, Wagner, Verdi? Does it contain such historical publications as the *Denkmäler der Tonkunst* in Austria and Germany, the *Paléographie musicale, Les Archives de Maitres de l'Orgue, L'arte musicale in Italia, Les maitres musiciens de la Renaissance française*, the series of volumes of the Musical Antiquarian Society, or the other similar undertakings designed to rescue from oblivion and to revive, at least for the student, masters of the past? * * *

It is not the frequency of use of a book that counts, but the use to which a book is put. A costly and rare book consulted only once in 10 years, but then by a man of far-reaching research or codification of research, has justified its acquisition just as much as an inexpensive, commonplace book consulted every day for mere receptive information.

If the absence of works of "antiquarian" or "modern" interest be explained on the grounds of expensiveness, the explanation will carry weight. For it is a regrettable fact that chamber music, orchestra music, opera scores, etc., entail an expenditure which acts as a barrier to the comprehensive acquisition of meritorious music. And when the prices of foreign works of musical art are Americanized a librarian may well despair of his ability to satisfy the needs of a musical community. When scores of the type mentioned above run in cost anywhere from $4 to $250, the difficulty of assembling a representative collection of music becomes obvious, not to mention a moderate indulgence in bibliographical rarities or in autograph scores.

On the other hand, however, by no means all desirable and necessary music is beyond reach of even poor institutions. In every country music publishers have sought to meet the situation by issuing the standard works by standard composers for a moderate price. By surveying such editions any librarian with a modicum of expert knowledge may assemble a collection of indispensable works of musical art and of books on music. Indeed, respectable publishers have tried to facilitate his task by forming for him just such collections at a price which, of course, keeps pace with the character, extent, and scope of the purchases *en bloc* suggested. Strange to say, either for lack of confidence in the interested disinterestedness of publishers or for lack of interest or knowledge or ability to resist the temptation of wasting one's meager funds on favored composers and alluringly advertised expensive publications, or for other reasons, it would appear that the movement has not been an unqualified success. True, many small libraries have embraced the opportunities offered, but just as many have neglected them, with the result that the number of reasonably well-equipped public musical libraries seems to be abnormally small in our country.

There is something fundamentally wrong somewhere in the situation if for instance a prominent publisher could sell to private music lovers many thousand single volumes, but to public libraries only about 50 complete sets of a remarkable publication (now nearing the hundredth volume) which will form a comprehensive musician's library in itself, costs less than $2 a volume, and for merit belongs to that type and class of publication which ought to be not in 50 but in 1,000 public libraries.

Precisely such serial publications, in a way encyclopedic publications, ought to form the basis of every public collection. It is the center from which the concentric method of library development can best find its outward impetus; and no other method, provided it be not employed too rigidly or pedantically, will produce equally satisfactory results. Without it the collections will soon become unbalanced; they will suffer from obesity here and from anemia there. Nor is this all. Such publications, planned as libraries within libraries, lend themselves to bibliography treatment for reference purposes more readily and more fruitfully than collections formed by picking out this or that work from catalogues. And paradoxical as it may sound, small libraries, with contents of such publications analytically catalogued, will often be in a better position to supply a sudden demand for specimens of work by an out-of-the-way composer than large libraries with an operating force too small or administrative machinery unsuited for proper analysis of collective publications.

An annual appropriation of $300 for the purchase of good music and good books on music is the *minimum* expenditure from which to expect results of

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substantial benefit to even small musical communities. This estimate applies merely to reference libraries, not to circulating libraries with branch offices. Moreover, it takes into account only the acquisition of printed music and does not concern itself with a collection of talking-machine records or player-piano rolls, so useful and desirable for purposes of *vulgarisation*, as the French would say. The larger a community is, or the more it bubbles over with musical activities, the more inadequate such a small annual appropriation as the above naturally becomes. If we pass on to our musical centers, or would-be musical centers, even $1,000 will prove insufficient, if music really is meant to find a place in the public library in keeping with the community's interest in music.

The public libraries in cities like those mentioned above would deserve no *ordre pour le mérite* for exceptional services rendered, if their annual appropriation for music and books on music reached or exceeded $2,000. They would really be doing their duty only (and not more) toward music and its devotees by spending that sum every year. Even so, they would soon discover that the intelligent annual expenditure of $2,000 will not nowadays cover the field of legitimate ambition, and that their musical collection will retain at that rate the characteristics of a good "working library" on a fairly large scale, but will never develop into a really first-class library of international importance for antiquarian reserach or study of modern music.

BIBLIOGRAPHY OF MUSIC.

An extensive study of this subject, by Mr. Ernst C. Krohn, may be found in The Musical Quarterly, April, 1919, p. 231–254. Mr. Krohn has noted the following music lists not included in the replies to this questionnaire:

New York. New York City: *Public Library.*
List of works relating to folk-songs, etc. (from Bulletin, vol. 11, no. 5, May, 1907, p. 187–226).
List of works relating to the history of music (from Bulletin, January, 1908, p. 1–36).
Periodicals relating to music in the New York Public Library and the Columbia University Library (from Bulletin, vol. 3, no. 5, May, 1899, p. 232–238).

New York. Buffalo: *Grosvenor Library.*
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DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

BULLETIN, 1921, No. 34

STATUS OF THE RURAL TEACHER IN PENNSYLVANIA

By LE ROY ALBERT KING
Assistant Professor of Educational Administration, University of Pennsylvania

WASHINGTON
GOVERNMENT PRINTING OFFICE
1922

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STATUS OF THE RURAL TEACHER IN PENNSYLVANIA.

Chapter I.

INTRODUCTION.

PURPOSE AND PLAN OF THE STUDY.

The purpose of this study is to learn the true status of the rural teacher in Pennsylvania. By the rural teacher is meant the teacher in the one-teacher schools in the open country. The study is restricted for the most part to the facts and conditions pertaining to the teachers in the one-teacher schools. In some instances data will also be given regarding the teachers in two-teacher schools, villages, and boroughs, either for the purpose of helping to verify the conclusions concerning the teachers in the one-teacher schools, or merely to show contrasts and significant similarities.

As to scope, this study endeavors to collect all the data possible relating to (1) the personal, social, and economic status of the teacher; (2) conditions under which the work is conducted; (3) academic and professional preparation and training; (4) certification; (5) experience in teaching and tenure; and (6) salary. Each of these aspects will receive detailed consideration in single chapters as designated.

The material in general will be treated on the basis of the counties reporting as a composite whole, for the purpose of revealing the situation for the entire State, but in some cases individual counties will be used for more specific interpretations. It is not primarily the purpose to compare the data herein set forth with those of other States; in the first place, because of the very limited amount available in this field, and in the second place, because of the time and expense that would be incurred in trying to obtain such material from other States. Again, it is not the aim in dealing with the problems concerning the rural school teacher to set up a definite program for the State, but rather to present some conclusions and make such suggestions as the facts in this study may safely warrant.

ORIGINAL SOURCES AND PROCEDURE FOLLOWED.

(1) Upon investigating what material was accessible bearing upon the topic, it was found that, on account of the meager supply, a questionnaire would have to be formulated in order to get the information necessary for the study of many of its essential phases. Under the direction of Prof. Harlan Updegraff, with the assistance of the fellow members of the seminar in educational administration at the University of Pennsylvania, a tentative questionnaire was framed and distributed among the teachers in several townships in the vicinity of Philadelphia. After a number of trials and modifications of the original questionnaire, caused both by the type of answers given by the teachers, and by the tabulation of these replies in a preliminary study, the questionnaire was finally formulated as here given.

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TEACHER'S QUESTIONNAIRE.

1. Educational and professional training:
   (*a*) Did you attend a one-room rural school? ..... How many years? ..... A rural school of more than one room? ..... How many years? .....
   (*b*) Did you attend a village, borough, or city elementary school of eight grades? ..... How many years? .....
   (*c*) In the blank spaces below state further educational preparation, if any.

	Exact length of attendance.	Did you graduate?	Diploma or certificate.
High school	Years ..... and months.....	.....	.....
Academy	Years ..... and months.....	.....	.....
Normal school	Years ..... and months.....	.....	.....
Spring or summer normal course	Weeks.....	.....	.....
Summer college course	Weeks.....	.....	.....

2. Have you had any of the above academic or professional training since you began teaching? ..... Where? ..... How long? ..... Kind? ..... What would induce you to get a better academic or professional training for teaching? .....
3. What kind of certificate do you hold? .....
4. Experience in teaching. (Fill out blank spaces below.)

Rural, 1-room school.....	Number of school years.....	Number of places.....
Rural, more than 1-room school...	Number of school years.....	Number of places.....
Village.....	Number of school years.....	Number of places.....
Borough.....	Number of school years.....	Number of places.....
City.....	Number of school years.....	Number of places.....

5. Are you now teaching in a township? ..... In a village? ..... In a one-room rural school? ..... If more than one room, how many rooms? .....
6. How many pupils in your schoolroom? ..... How many recitations or classes do you teach in a day? ..... How many grades? ..... What grades? .....
7. What year did you begin teaching? ..... What was your age when you began teaching? ..... Is this your first year? ..... Age? ..... Sex? ..... Were you born and reared in the country? ..... In a village? ..... Borough? ..... City? .....
8. Are you married? ..... How many children? ..... If unmarried, is any one dependent on you for financial aid? ..... How many? ..... What amount per year? ..... Do you live with your parents or relatives while teaching? ..... Do you stay over Sunday in the community in which you teach? .....
9. What is your salary per month this year? ..... How many months? ..... What was your salary per month last year? ..... How many months? ..... Did you have any other income last year besides your teaching salary? ..... If so, how much per year? .....
10. What was your salary per month the first year you taught? ..... How often have you had your salary increased? ..... On what basis does your district raise salaries? .....
11. Do you pay board? ..... How much per month? ..... How many months? ..... How much per week? ..... How many weeks? .....
12. Did you save money on your salary last year? ..... Approximately how much? ..... Do you think you can save money on your salary this year? ..... How much? ..... Do you carry life insurance? ..... Cost per year? ..... Do you belong to a teacher's protective or beneficial organization? ..... Cost per year? .....

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13. Are you a subscriber for a pedagogical or professional magazine?..... Name?..... Cost?..... Do you invest any other money for professional literature?..... Kind?..... Cost?..... Do you have any reference books besides your regular class textbooks?..... What kind?..... Do you have a school library?..... Approximate number of books?..... Have you access to any other library for books or materials for teaching?..... Does your district hold local institutes?..... Are you a member of a reading circle?.....
14. Do you take part in a parent-teacher's association or any other kind of community activity held in your school building?..... Kind?..... Is the schoolhouse used for any kind of community meeting at night?..... Kind?..... How many homes of patrons do you think you visited last year?..... How many visits, approximately, were made by parents to your school last year?.....
15. How many hours last year did the county superintendent supervise your teaching?..... How many hours, the assistant county superintendents? ..... Did your school board visit your school?..... How many? ..... How often?.....
16. How much consideration does the school board in your district give to the county superintendent's or other supervisor's judgment at the time of a teacher's election or re-election? (Answer—None, little, or much)..... Do you believe you will be retained as a teacher next year in your district; or in other words do you have a feeling of security in your position?..... Why? .....

During the school year ending June, 1918, the questionnaires were distributed among the teachers in the one-teacher rural schools of 18 counties of the State. These counties were selected at random, with the exception that special precaution was taken that the eastern, central, and western parts of the State should be represented. It was also planned to include 3 counties in which State normal schools are located. As there are 66 counties in Pennsylvania under county supervision, excluding Philadelphia County, and since 13 of these have State normal schools, it will be seen that this is a fairly proportionate representation. The size of the counties was also taken into account, so that an equitable distribution of large and small counties should be represented in the study.

These questionnaires were distributed at the teachers' institutes of the different counties, and the teachers are represented who voluntarily remained either during the session of the institute or the intermission. In the majority of the counties the writer supervised the distribution of the questionnaires; in cases where it was impossible for him to do this, carefully prepared instructions were sent to the county superintendents to be read to the teachers, so that the questionnaires would be handled in each county in as uniform a manner as possible in order to avoid the least variation in procedure.

The teachers were asked to fill out the questionnaires but were instructed not to insert their names, in order to prevent any hesitancy on their part in giving the facts requested; likewise the county superintendents were assured that their counties would not be referred to by name. These precautions were taken to make the study as accurate and scientific as possible. From the 18 counties there were 1,450 replies received, of which 1,110, or 76.5 per cent, were given by women teachers, and 340, or 23.5 per cent, by men—an average of 80 replies for each county represented. The number of teachers from the different counties who replied averaged 62 per cent of the teachers enrolled in one-teacher schools in each county respectively.

Although all the teachers in each of the 18 counties did not reply to the questionnaire, there is sufficient evidence to establish the belief that those who responded constitute a very fair sampling of the teachers of each county represented. Of the teachers constituting this study, 45 per cent hold provisional certificates, 24.7 per cent professional, 12 per cent permanent, 18 per cent normal school certificates or diplomas, and approximately 0.3 per cent college provisional or permanent certificates. The smaller percentage of teachers holding provisional certificates and the

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larger percentage of teachers holding permanent certificates and normal school certificates and diplomas, as compared with the per cent for the State as a whole (Chapter VII), would alone seem to justify this assumption. Consequently, any unfavorable criticism of rural schools of Pennsylvania can not be gainsaid on the ground that an inferior sampling of the teaching group had been made.

The superintendents in some of the counties examined the answered questionnaires and stated that in view of their knowledge of the teachers they believed the replies to be accurate and representative of the teaching force of their respective counties. The complete and illuminating way in which the questions were answered, especially those pertaining to the social and economic status of the teacher, also bears out the judgment of the county superintendents. It is the belief of the writer that the interest manifested by the teachers, after being assured that the main purpose of the questionnaire was to get the facts which might eventually be used for improving the status of the rural school teacher, is evidence that their replies are accurate and reliable.

The replies of the teachers were completely tabulated on 18 record sheets—one for each county represented—outlined so as to set forth clearly the information under such headings as academic and professional preparation, teaching experience, salaries, economic conditions, etc. Each teacher's questionnaire was given a number to coincide with the number on the county record sheet in order to check up or trace an individual teacher's record. These county record sheets made possible the tabulation not only of the total record for each county, but also of the combined record sheet for all the cases, making readily accessible each item covered by the data for the composite group.

It will be observed throughout the study that there is considerable variation between the total number of teachers replying to the questionnaire and those answering individual items. Percentages are usually made on the basis of the number of teachers answering the particular question, rather than upon the whole number of teachers reporting.

(2) Besides the use of the questionnaire above referred to, it was necessary to obtain further original data directly from the county superintendents. They were asked to send a complete directory of the teachers under their supervision for the school years 1918–19 and 1919–20, designating those who were teachers in one-teacher and two-teacher schools in the townships. They also indicated after each teacher's name (1) the kind of certificate held, (2) whether a new teacher without experience, or (3) an experienced teacher transferred to another school, and (4) the teacher's salary. Data regarding these phases of the status of approximately 5,100 teachers were submitted by the superintendents of 30 counties through their official directories. The number of counties and teachers covered by this material will be referred to specifically throughout the discussion.

(3) A questionnaire was sent to each principal of the 13 State normal schools to give and corroborate certain statistics pertaining directly to the training and certificating of rural teachers. Specific reference will be made to this material in certain parts of the context.

SECONDARY SOURCES.

Among the secondary sources furnishing data, the State reports issued by the superintendent of public instruction should be mentioned, particularly the one for 1918. Since the data in the State reports, for the different counties and for the entire State, deal with all the teachers under county supervision as a composite whole, the information was found quite limited, in so far as it was directly applicable to the problem at hand—the teacher in the one-teacher rural school.[1]

[1] Rep. Sup. of Pub. Instruction, Pennsylvania, 1918.

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The report on rural schools by a committee of the Pennsylvania State Educational Association, issued in 1914, contributed to the formulation of parts of this study.[2]

Suggestions were obtained from Coffman's "The Social Composition of the Teaching Force," particularly in reference to the social and economic status of the teacher.[3]

The legal basis for this study is found largely in the Pennsylvania School Code.[4] In the case of all other sources and references used, due and proper recognition will be given as each one occurs in the various chapters.

The statistical procedure used in this study is based largely on Thorndike's "Mental and Social Measurements[5] and Rugg's "Statistical Methods Applied to Education,[6] in which the terms and processes used are clearly defined.

THE BACKGROUND.

The 10,038 teachers in the one-teacher schools of Pennsylvania constitute approximately one-fourth of the entire number of teachers in the State and one-half of the teachers under county supervision. The number of teachers in one-teacher rural schools is larger than the total number of teachers of all classes in each of 23 different States of the United States and is approximately equivalent to the total number of teachers in the States of Arkansas, Mississippi, and West Virginia.[7] With the exception of Iowa, with approximately 11,000,[8] and Illinois, with 10,105[9] one-teacher schools, Pennsylvania ranks highest among all the States in the number of teachers in one-teacher schools. The next States in rank are New York, with 8,500 one-teacher schools;[10] Minnesota, with 8,174;[11] and Wisconsin, with 7,000.[12]

These one-teacher schools are distributed for each of the 66 counties of the State (Philadelphia excluded) in the accompanying Table 1. It will be seen that 10,038, or 42.2 per cent, of the entire number of teachers under county supervision—namely, 23,807—are teaching in one-teacher schools, and that approximately 2,394, or 11.3 per cent, are teaching in two-teacher schools.[13] The range of the number of teachers in the one-teacher schools of the different counties extends from 22 to 361 and in per cent from 8 to 96 of the total number of teachers in each county. The median county has 51 per cent of the teachers in one-teacher schools, indicating that one-half, or 33 of the counties, have from 51 to 96 per cent of their teachers in one-teacher schools. It will be noted that counties 23 and 2, which contain large cities, have only 8 and 10 per cent of their teachers in one-teacher schools. On the other hand, counties 29 and 47 have over 90 per cent of their teachers in these schools. Both of these counties are very sparsely populated, having a teacher in a one-teacher school for every 126 and 159 inhabitants.

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[2] Rep. of Rural Educ., committee of the Pa. Educ. Assoc., Harrisburg, Dec., 1914, Part IV, pp. 37–47.

[3] Coffman, L. D.—The Social Composition of the Teaching Population, Teachers College, Columbia University.

[4] School Laws and Appendix for Pennsylvania, 1919.

[5] Thorndike, E. L.—Mental and Social Measurements, Teachers College, Columbia University.

[6] Rugg, H. O.—Statistical Methods Applied to Education, Houghton Mifflin Co.

[7] Rep. U. S. Commis. of Educ., 1917, vol. 2, p. 76.

[8] Rep. Supt. Pub. Instruction, P. E. McClenahan.

[9] Rep. Supt. Pub. Instruction, F. G. Blair.

[10] Engelhardt, "The Teaching Profession in the State of New York" (unpublished). Will appear in the Annual Report for 1918–19 of the Assistant Commissioner of Education, New York State.

[11] Rep. Commissioner of Education, James M. McConnell.

[12] Rep. Supt. Pub. Instruction, C. P. Cary.

[13] Rep. Supt. Pub. Instruction for Pa., 1918, pp. 608–610. Becht, J. George, "A Study of School Consolidation and Transportation." Sixth An. Schoolmen's Week Proc., p. 197.

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TABLE 1.—*Number of elementary teachers under county supervision—Number and per cent in one-teacher schools, two-teacher schools, more than two-teacher schools in villages and boroughs—Population and area in square miles.*

County.	Total number of teachers.[1]	Number in one-teacher schools.[2]	Number in two-teacher schools.[2]	Number in more than two-teacher schools.	Per cent in one-teacher schools.	Per cent in two-teacher schools.	Per cent in more than two-teacher schools.	Rural population of counties in 1910.[4,5]	Population per teacher in one-teacher schools.	Area in square miles.	Square miles for one-teacher schools.
Adams	221	151	12	58	69	8	23	34,319	227	528	3.5
Allegheny	1,722	185	114	1,423	10	7	83	839,134	4,536	725	3.9
Armstrong	435	223	38	174	51	9	40	67,880	308	553	2.5
Beaver	483	128	54	221	32	13	55	58,162	461	429	3.3
Bedford	348	223	36	89	64	10	26	38,879	174	1,026	4.6
Berks	664	335	36	293	53	6	39	87,151	263	866	2.6
Blair	301	128	60	113	43	20	37	49,555	387	534	4.1
Bradford	463	219	40	204	47	9	44	54,526	248	1,145	5.2
Bucks	419	188	68	162	45	16	39	76,530	405	608	3.2
Butler	351	222	60	69	63	17	20	51,916	234	790	3.5
Cambria	687	176	110	407	25	16	59	119,649	651	717	4.2
Cameron	58	29	8	28	38	14	48	7,644	347	392	12.8
Carbon	276	55	12	209	20	4	76	52,846	961	406	7.4
Centre	313	159	28	126	51	9	40	43,426	273	1,146	7.2
Chester	468	225	68	175	48	15	37	75,619	336	777	3.4
Clarion	282	172	26	84	61	9	30	35,658	208	601	3.5
Clearfield	560	241	78	241	43	14	43	74,294	308	1,143	4.7
Clinton	177	84	12	81	47	7	66	23,773	283	878	10.4
Columbia	224	113	30	73	50	17	33	46,467	412	479	4.2
Crawford	373	311	44	18	83	12	5	48,785	157	1,038	3.5
Cumberland	290	155	24	111	53	8	39	44,176	285	528	3.4
Dauphin	331	128	28	175	39	8	53	57,720	451	521	4.1
Delaware	363	28	18	317	8	5	87	79,389	2,834	185	6.6
Elk	227	59	28	140	22	12	66	35,871	717	866	16.1
Erie	378	201	20	157	53	5	42	48,992	243	781	3.9
Fayette	749	177	99	473	24	12	64	141,280	798	795	4.5
Forest	64	43	18	3	67	28	5	9,425	219	423	9.8
Franklin	307	197	72	38	64	23	13	47,975	243	751	3.8
Fulton	84	77	4	3	92	5	3	9,788	126	402	5.2
Greene	272	174	20	78	64	7	29	28,882	166	574	3.3
Huntingdon	251	170	18	63	68	7	25	31,443	185	918	5.4
Indiana	443	204	32	207	46	7	47	66,210	324	829	4.0
Jefferson	349	167	30	152	48	9	43	53,932	322	666	4.0
Juniata	90	69	6	15	77	7	16	230,759	3,788	392	5.7
Lackawanna	222	65	20	137	29	9	62	65,333	1,005	451	6.9
Lancaster	656	391	74	215	58	11	33	109,348	300	941	2.6
Lawrence	184	103	30	51	56	16	28	33,752	327	360	3.4
Lebanon	247	119	26	102	48	11	41	40,325	338	360	2.9
Lehigh	371	132	52	187	35	14	51	46,852	360	348	3.1
Luzerne	1,206	150	22	1,034	12	2	86	198,480	1,323	892	5.9
Lycoming	321	197	30	94	61	9	30	48,953	247	1,206	6.1
McKean	211	92	28	91	43	13	44	33,324	362	987	10.7
Mercer	356	207	20	129	58	6	36	62,429	301	700	3.3
Mifflin	127	62	6	59	49	5	46	19,619	316	398	6.4
Monroe	171	102	24	45	60	14	26	22,941	224	623	6.1
Montgomery	486	113	56	317	23	12	65	92,531	818	484	4.3
Montour	48	46	2		96	4		7,351	159	190	2.8
Northampton	368	151	46	171	41	13	66	65,437	433	372	2.4
Northumberland	291	126	22	143	43	8	49	36,965	293	454	3.6
Perry	201	132	8	61	66	4	30	24,136	182	563	4.2
Pike	70	59	4	16	71	6	23	8,088	160	544	10.9
Potter	126	108	12	6	86	10	4	29,729	275	1,071	9.9
Schuylkill	705	155	88	462	22	12	66	145,948	942	777	5.0
Snyder	128	82	12	34	64	9	27	16,866	204	311	3.8
Somerset	477	237	54	186	50	11	39	67,717	285	1,034	4.3
Sullivan	124	72	4	48	58	3	39	11,293	157	458	6.2
Susquehanna	283	148	8	127	52	3	45	37,746	255	824	5.6
Tioga	306	145	18	143	47	6	47	42,829	295	1,142	7.8
Union	109	69	10	27	61	15	24	16,249	246	386	4.6
Venango	229	161	26	42	70	11	19	30,925	192	664	4.1
Warren	233	118	16	99	51	7	42	28,493	241	902	7.6

[1] Rep. Supt. Pub. Instruction for Pa., 1918, p. 610.
[2] Ibid, p. 668. Becht, J. George, A Study of School Consolidation and Transportation, Sixth An. Schoolmen's Week Proc., p. 197.
[3] Ibid.
[4] Smull's Legislative Hand Book of Pennsylvania, p. 389. Population includes only school districts under county superintendents' supervision.
[5] Geographical Gazetteer, Rand-McNally.

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TABLE 1.—*Number of elementary teachers under county supervision—Number and per cent in one-teacher schools, two-teacher schools, more than two-teacher schools in villages and boroughs—Population and area in square miles*—Continued.

County.	Total number of teachers.	Number in one-teacher schools.	Number in two-teacher schools.	Number in more than two-teacher schools.	Per cent in one-teacher schools.	Per cent in two-teacher schools.	Per cent in more than two-teacher schools.	Rural population of counties in 1910.	Population per teacher in one-teacher schools.	Area in square miles.	Square miles for one-teacher schools.
Washington	761	280	100	381	37	13	50	115,287	411	862	3.1
Wayne	246	158	34	82	64	6	35	29,236	185	730	4.9
Westmoreland	966	296	144	526	31	15	54	206,517	697	1,039	3.5
Wyoming	130	67	12	51	52	9	39	15,569	231	397	5.9
York	571	350	56	171	61	9	30	91,855	262	903	2.5
Total	23,867	10,038	2,394	11,378	42.27	11.3	46.5	4,536,643		44,832	
Range		22–361	2–144	0–1,423	8–96	2–28	0–87		126–4,536		2.4–17.8
Median county		150	26	111	51	9	39		295		4.2
25 percentile		88	14	51	40	7	28		231		3.4
75 percentile		197	50	186	61	13	50		411		6.1
Quartile deviation		54.5	18	67.5	10.5	3	11		90		1.4

The table shows that the number and per cent of teachers in one-teacher schools in the counties of the State vary greatly on basis of the 1910 census rural population, ranging in number of inhabitants per teacher from 126 in the most sparsely populated county to 4,536 in the county with the largest population. The population per teacher in the median county is 295.

Since the size of the counties in Pennsylvania ranges from 130 to 1,200 square miles, it is not surprising that the range in square miles for each teacher in a one-teacher school extends from 2.4 to 17.8, with the median county showing 4.2 square miles. In the case of the 10 counties with an area of 1,600 square miles or more the per cent of one-teacher schools ranges from 31 to 86. For example, in counties 20 and 52 the county superintendents have 311 out of 373, or 83 per cent, and 108 out of 126, or 86 per cent, of the teachers under their supervision in one-teacher schools. On the other hand, counties 17 and 64 of this group of large counties have 241 out of 560 and 296 out of 968 teachers in one-teacher schools, percentages of 43 and 31, respectively.

Some facts concerning the teacher situation in Pennsylvania.

	Number.	Per cent.
A. NUMBER OF TEACHERS IN 1918–19.		
In State (excluding Philadelphia and Pittsburgh)	35,641	
Under county superintendents' supervision	23,807	100
In villages and boroughs	11,375	47
In one-teacher schools	10,038	42
In two-teacher schools	2,394	11
B. NUMBER OF NEW TEACHERS.		
Under county superintendents' supervision, 1919–20[1]	5,500	23
Under county superintendents' supervision, 1918–19 (without experience)	4,044	17
In one-teacher schools, 1919–20 (without experience)	3,200	32
In one-teacher schools (experienced in a new position)	3,900	39
C. NORMAL-SCHOOL GRADUATES.		
In 1918	1,964	
In 1919	1,750	
In 1920	1,650	
Estimated number of normal graduates entering rural schools in 1919[2]	248	15

[1] Study in Teacher Shortage, Department of Public Instruction, Pennsylvania, 1919–20 (unpublished).
[2] Number estimated, based on the replies to a questionnaire to the normal-school principals.

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Washington	761	280	100	381	37	13	50	115,287	411	862	3.1
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Westmoreland	966	296	144	526	31	15	54	206,517	697	1,039	3.5
Wyoming	130	67	12	51	52	9	39	15,589	251	397	5.9
York	571	349	50	171	61	9	30	91,855	262	903	2.5
Total	23,807	10,038	2,394	11,375	42.2	11.3	46.5	4,596,643		44,832	
Range		22–361	2–144	0–1,423	8–96	2–28	0–87		126–4,536		2.4–17.8
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Chapter II.

SOCIAL AND ECONOMIC STATUS.

Before going into the study of the rural teachers from the point of view of their educational preparation, certification, experience, and salary, we shall consider the more personal factors relating to their social and economic life. It is hoped that by following this procedure we may have a better conception of rural teachers as such, and thus be better able to interpret the conditions and situations later revealed in the major part of this study.

MEN AND WOMEN TEACHERS.

In the accompanying Table 2 the data obtained from the directories issued by the county superintendents for the present year, 1919–20, show that 76 per cent of the 2,743 teachers in the one-teacher elementary schools are women and 24 per cent are men. Comparing these percentages with the State averages for 1918—for women 82.4 and for men 17.6—it will be seen that in these 20 counties represented the per cent of men teachers surpasses the State average for men in 1918 by 6.4.[1] It is interesting to note further that the percentage of men teachers in these counties is also approximately 4 per cent higher than that for the United States as a whole in 1917, which was 19.7 per cent.[2]

TABLE 2.—*Distribution by number and per cent of men and women teachers in one-teacher schools of 20 counties in 1919–20.*

No. of county.	Men.	Women.	Total.	Per cent men.	Per cent women.
1	41	178	219	19	81
2	30	95	125	24	76
3	20	160	180	11	89
4	17	152	169	10	90
5	30	174	204	15	85
6	3	21	24	13	87
7	13	27	40	33	67
8	18	196	214	8	92
9	53	94	147	36	64
10	47	102	149	32	68
11	40	46	86	47	53
12	19	50	69	28	72
13	18	49	67	27	73
14	43	80	123	35	65
15	6	94	100	6	94
16	41	75	116	35	65
17	71	172	243	29	71
18	8	35	43	19	81
19	2	102	104	2	98
20	137	184	321	43	57
Total	657	2,086	2,743	24	76
Range	2–137	21–196	.....	2–47	53–98
First quartile	13	49	.....	11	65
Median	20	94	.....	24	73
Third quartile	41	160	.....	33	87
Quartile deviation	14	56	.....	11	10.5

[1] Rep. Supt. Pub. Instruction for Pa., 1918, p. 633.
[2] Rep. U. S. Commis. of Educ., 1916–1918, Vol. III, p. 16.

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While there is very little available material from other States concerning the per cent of men and women teachers in the rural schools grouped apart from all the teachers in the public schools, nevertheless what we do have shows that Pennsylvania has a higher percentage than certain other States. For example, a survey of Nebraska in 1915 showed the percentage of men teachers in the rural schools to be 10.3 and of women 89.7.[3] In 1918, among the white teachers in county schools in Virginia, 9 per cent were men and 91 per cent, women.[4]

A study of the per cent of men and women teachers in the separate counties as shown in the table reveals a wide variation. On the one hand, counties 11 and 20 show 47 and 43 per cent men teachers, respectively, comprising nearly one-half of the teachers in the one-teacher schools. On the other hand, in county 19 only 2 per cent of its 104 teachers are men, and in counties 8 and 15 the men teachers are 8 and 6 per cent, respectively. From these facts it will be seen that the range of the men teachers extends from 2 to 47 per cent, while for the women the range is high, extending from 53 to 98 per cent.

From the data at hand it is difficult to account for the large variation in the number and per cent of men and women teachers in the different counties. It happens, however, that the counties having the highest per cent of men teachers are usually classified as agricultural counties. Through the questionnaire it was learned that in the counties having a high proportion of men teachers the majority were married, lived on farms, and frequently reported substantial incomes in addition to their salaries received for teaching. Owing to such living conditions, teachers remain in the teaching service, thus bringing about greater stability in the teaching force.

AGE OF TEACHERS.

Of the 1,446 cases represented in Table 3, 1,109 are women and 337 men, with ages ranging from 18 to 65 years. The median age of the women teachers is 22, and of the men, 26.7, showing a difference on an average of over 4 years. Although the range in the age of men teachers is practically the same as that of the women, yet there is greater variation and a wider distribution about the midpoint in the case of the men teachers than in that of the women, as evidenced by the quartile deviation of 10 in the first case and 3.5 in the second. The upper 25 per cent of the men and women teachers are beyond 41 and 27 years of age, respectively, indicating more conclusively the higher age of men teachers.

The median age for the combined group of rural teachers in one-teacher schools is 22.8 years, which is approximately the same as the median age for the rural teachers in Nebraska,[5] and South Dakota in 1918,[6] 21.01 years and 22.14 years, respectively. The average age for the rural teacher in one-teacher schools in New York State in 1919 was 27 years.[7]

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[3] The Rural Teacher of Nebraska, U. S. Bul., 1919, No. 20, p. 21.
[4] Va. Pub. Sch. Survey, 1919, p. 135.
[5] The Rural Teacher of Nebraska, U. S. Bu. of Educ., Bul., 1919, No. 20, p. 23.
[6] The Educational System of South Dakota, U. S. Bu. of Educ., Bul., 1918, No. 31, p. 211.
[7] Engelhardt, F. The Teaching Profession in the State of New York.

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TABLE 3.—*Total distribution and distribution of men and women teachers in one-teacher schools of 18 counties according to age, followed by 8 typical counties.*

Age.	Total distribution (18 counties).	Men teachers.									Women teachers.								
		Total.	Typical counties.								Total.	Typical counties.							
			1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8
18	129	19	.....	.....	2	1	3	1	2	1	110	5	3	3	8	2	11	11	7
19	175	24	.....	.....	1	1	4	.....	3	1	151	2	7	13	17	11	8	11	7
20	192	26	4	1	1	.....	4	3	1	2	166	6	1	12	27	11	7	13	10
21	148	22	.....	.....	1	2	8	.....	2	4	126	4	7	6	20	12	7	7	2
22	98	18	.....	.....	1	.....	2	1	.....	4	80	2	1	3	15	8	1	7	5
23	91	17	.....	.....	1	.....	3	1	1	.....	74	.....	1	6	11	4	5	3	5
24	74	19	.....	3	.....	1	4	2	1	3	55	1	5	2	7	3	.....	3	5
25	60	16	1	5	.....	.....	3	.....	3	3	44	.....	1	2	11	6	1	1	3
26	34	11	.....	2	.....	.....	1	.....	1	4	23	1	.....	1	5	1	.....	1	1
27	35	6	.....	.....	.....	.....	2	.....	.....	4	29	.....	2	.....	4	3	1	1	1
28	21	6	.....	1	.....	.....	1	.....	1	1	25	1	3	.....	5	2	.....	2	2
29	32	7	.....	2	.....	.....	.....	.....	1	1	25	.....	1	.....	3	4	1	2	1
30	61	16	1	1	.....	1	1	1	4	3	45	3	1	.....	8	1	1	2	2
32	26	6	.....	.....	.....	.....	1	.....	2	2	20	1	1	.....	2	1	2	2	2
34	28	6	.....	2	.....	.....	.....	.....	.....	2	22	1	.....	.....	2	.....	3	2	1
36	35	15	1	2	1	.....	.....	3	2	3	20	3	1	.....	2	.....	3	2	1
38	32	9	.....	3	.....	.....	3	1	.....	1	23	.....	1	2	4	2	1	4	.....
40	22	11	.....	1	.....	1	1	.....	2	2	11	.....	1	.....	3	2	.....	.....	1
42	28	15	.....	6	.....	1	1	3	.....	3	13	2	.....	.....	2	2	.....	1	.....
44	14	10	1	5	.....	.....	1	1	.....	1	4	.....	1	.....	1	1	.....	.....	.....
46	18	10	.....	2	.....	.....	.....	3	2	2	8	.....	.....	.....	5	1	.....	.....	.....
48	17	8	1	3	.....	.....	.....	3	.....	.....	9	1	.....	2	2	.....	1	.....	2
50	25	14	.....	.....	1	1	2	2	3	1	11	.....	1	.....	2	2	1	.....	.....
55	24	13	.....	2	.....	.....	2	4	.....	.....	11	1	2	1	1	1	.....	.....	.....
60	13	10	1	2	.....	.....	2	2	.....	3	3	.....	.....	.....	1	.....	.....	.....	.....
65	4	3	.....	1	.....	.....	.....	.....	2	.....	1	.....	.....	.....	.....	1	.....	.....	.....
Total	1,446	337	10	43	9	9	53	29	33	49	1,109	34	41	54	168	81	56	71	67
Median		26.7	.....	.....	.....	.....	.....	.....	.....	.....	22.0	.....	.....	.....	.....	.....	.....	.....	.....
First quartile		20.3	.....	.....	.....	.....	.....	.....	.....	.....	20.1	.....	.....	.....	.....	.....	.....	.....	.....
Third quartile		29.6	.....	.....	.....	.....	.....	.....	.....	.....	27.1	.....	.....	.....	.....	.....	.....	.....	.....
Quartile deviation		4.7	.....	.....	.....	.....	.....	.....	.....	.....	3.5	.....	.....	.....	.....	.....	.....	.....	.....

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BEGINNING AGE OF TEACHERS.

Table 4 shows that the median age at which the 1,421 teachers represented began teaching is 19.2, and that the range extends from 15 to 32 years. The 123 teachers who reported their teaching as beginning earlier than at the age of 18 must have begun their work before the enactment of the Pennsylvania School Code of 1911. Twenty-six teachers reported as having entered the teaching profession at 25 or more years of age. The middle 50 per cent of this group ranges from 18.4 to 20.5 years, meaning that 710 teachers, or half the group, began teaching between these years.

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TABLE 4.—*Distribution of teachers according to the age they began teaching—Total distribution, followed by 8 typical counties.*

	Beginning age.																		
	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	Total.
Total distribution (18 counties)	3	24	96	525	318	222	114	54	27	12	3	8	5	3	1	2	3	1	1,421
Per cent	0.2	1.7	6.8	36.9	22.4	15.6	8.0	3.8	1.9	0.9	0.2	0.6	0.3	0.2	0.1	0.1	0.2	0.1	100
Typical counties:																			
1	.....	.....	1	19	13	7	1	3	.....	.....	1	2	.....	.....	.....	.....	.....	.....	47
2	.....	3	11	25	17	12	16	5	3	.....	.....	.....	.....	.....	.....	1	.....	.....	93
3	.....	.....	1	29	17	12	2	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	63
4	.....	1	8	40	39	41	16	10	3	1	.....	1	1	.....	.....	.....	1	.....	162
5	2	6	16	61	23	15	7	4	3	1	.....	1	1	.....	.....	1	1	.....	142
6	.....	3	3	34	19	12	5	2	3	.....	.....	.....	.....	.....	1	.....	.....	.....	92
7	.....	3	5	57	28	4	3	3	1	2	.....	.....	.....	1	.....	.....	.....	.....	107
8	.....	2	15	36	31	12	8	5	3	1	.....	.....	1	1	.....	.....	.....	1	116

Median age	19.2
First quartile	18.4
Third quartile	20.5
Quartile deviation	1.1

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TEACHERS BORN AND REARED IN THE OPEN COUNTRY.

It has been pointed out repeatedly in the recent literature on rural education that one of the main factors in the success of rural teaching is to know rural life and be in sympathy with its problems. A circumstance which should help teachers secure an insight into and a sympathetic understanding of rural life and customs, especially in the case of those not trained professionally for rural teaching, is their being born and reared in the open country. In the light of this, it was thought advisable to tabulate the data as found in Table 5.

TABLE 5.—*Number of teachers in one-teacher schools born and reared in the open country, villages, boroughs, and cities—total distribution and per cent, followed by 8 typical counties.*

	Open country.	Village.	Borough.	City.	Total.
Total distribution 18 counties	1,003	92	164	99	1,358
Per cent	74	7	12	7	100
Distribution in typical counties:					
1	35	5	3	.....	43
2	64	4	9	3	80
3	122	12	25	8	167
4	30	2	3	4	39
5	88	8	14	27	137
6	53	3	20	8	84
7	78	1	10	13	102
8	100	3	6	4	113

Among the 1,358 teachers who answered the question as to the place of their birth, 1,003, or 74 per cent, were born and reared in the open country; 92, or 7 per cent, in villages; and 19 per cent in boroughs and cities. Since it will be shown later that approximately three-fourths of these teachers had no professional training to fit them for teaching in rural schools,[8] it might, therefore, be considered fortunate that such a large proportion of the teachers represented in this study were familiar with rural life, and had received at least part of their educational experience in a rural school. Many county superintendents state that they would prefer to have teachers under their supervision who possess a sympathetic understanding of the life and customs of rural people rather than to have those who come from boroughs and cities with better academic preparation but unfamiliar with rural work.

TEACHERS LIVING WITH PARENTS OR RELATIVES.

In reply to section 8 of the questionnaire, pertaining to the social life of the teacher, it was found that, out of the 1,160 replies, 739, or 64 per cent, reported they were living with their parents or relatives while teaching; but 348 out of the 739, or nearly half the number, were obliged to pay from their meager salaries a certain amount for board and room.

TEACHERS MARRIED AND SINGLE.

Of the 336 men teachers replying to this part of the questionnaire, 184, or 55 per cent, were married. This probably is a fortunate situation, in that their homes may be made to serve as teacherages and in that it helps to improve the stability of the rural teaching force in many counties of the State. In considering the very small proportion of married women teachers, 60 out of 1,050, or approximately 6 per cent,

[8] See p. 34.

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the question might well be raised, especially in these times of great scarcity of teachers, whether a special effort should not be made to induce and encourage more married women either to continue in the service or to reenter the profession of teaching.

BOARD AND LODGING.

Out of the 1,450 replies received, 870, or 60 per cent, reported as paying for board and room. Of this number, 747 were women and 123 were men. The yearly and monthly cost of board and room for the teachers reporting these items of expense are shown in Tables 6 and 7. The outstanding feature of this information is the wide variation in the cost, both on the monthly and yearly basis. For example, it will be seen in Table 6 that the yearly cost of board and room ranges from less than $50 to more than $200. The median cost per year (generally considered the school year) is $121, while the cost for 61 per cent of the teachers ranges from $75 to $150. Probably the most significant fact revealed by a study of this table is that 38 per cent of the teachers pay less than $100 per year for board and room. It should be recognized that these data were collected in 1918, and that in the meantime this item of expense has been very greatly increased. Nevertheless, the facts seem to bear out the opinion generally held that the cost of board and room for rural teachers is considerably less than for urban teachers.

TABLE 6.—*Yearly cost of board and room.*

	Less than $50.	$50–$74	$75–$99	$100–$124	$125–$149	$150–$174	$175–$199	$200 or above.	Total.
Total distribution 18 counties	16	82	213	118	174	84	79	53	819
Per cent	2	10	26	14	21	10	10	7	100
Typical counties:									
1	1	5	6	7	5	2	1	.....	27
2	.....	3	4	2	12	5	6	4	36
3	2	3	21	24	36	19	16	5	126
4	.....	1	19	1	7	1	1	.....	30
5	1	4	13	11	15	6	4	13	67
6	1	11	11	.....	6	1	.....	.....	20
7	1	7	21	16	4	.....	.....	2	51
8	2	10	18	2	1	.....	.....	.....	33

Turning to the individual counties, it will be seen that there is considerable variation in the amount of money expended for board and room. Counties 5 and 8 show a median cost of $133 and $83, respectively. This difference can probably be somewhat explained by the fact that county 8 is principally an agricultural county, while county 5 contains a number of urban communities.

TABLE 7.—*Monthly cost of board and room.*

	$6–$8	$9–$11	$12–$14	$15–$17	$18–$20	$21–$23	$24–$26	$27–$29	$30 or above.	Total.
Total distribution 18 counties	31	86	219	194	217	13	52	4	14	832
Per cent	4	11	26	23	25	2	7	.....	2	100
Typical counties:										
1	.....	1	6	11	11	.....	1	1	1	33
2	3	4	9	9	13	.....	2	.....	1	41
3	2	14	32	27	43	6	10	1	2	137
4	8	8	24	20	19	3	6	.....	2	90
5	.....	7	3	9	27	1	17	.....	2	66
6	.....	14	9	2	7	.....	.....	.....	.....	32
7	1	9	23	11	9	.....	.....	.....	1	54
8	6	9	16	5	1	.....	.....	.....	.....	37

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The median monthly cost of board and room, as shown in Table 7, is $16; the range extends from $8 to $30 or more per month. It will be further observed that 75 per cent of the teachers paid from $12 to $20 per month, and that 14 per cent paid less than $12 per month.

TABLE 8.—*Number of months for which teachers pay for board and room.*

	Months.								
	5 or less.	6	7	8	9	10	11	12	Total.
Total distribution 18 counties	21	18	439	178	76	15	.....	70	817
Per cent	2	2	54	22	9	2	.....	9	100
Typical counties:									
1	3	2	27	.....	.....	.....	.....	.....	32
2	.....	.....	9	14	16	.....	.....	4	43
3	2	.....	49	47	26	.....	.....	13	137
4	.....	2	50	17	8	8	.....	13	98
5	2	1	23	19	.....	.....	.....	13	58
6	2	2	28	1	.....	.....	.....	1	34
7	2	1	28	3	.....	.....	.....	2	36
8	4	.....	32	.....	.....	.....	.....	2	38

It will be seen in Table 8 that over 50 per cent of the teachers reported that they paid for board and room for seven months of the year, which is the length of the school term for a majority of the teachers in rural districts. Teachers who paid their living expenses for a period of eight and nine months usually taught in counties in which a large proportion of the school districts have eight and nine months' terms. Eleven per cent of the teachers had to meet these expenses for a period of 10 months or more, while only 9 per cent were obliged to meet them for the entire calendar year.

TEACHERS REMAINING OVER SATURDAY AND SUNDAY IN THE COMMUNITY IN WHICH THEY TEACH.

In most of the recent literature on rural education, particular emphasis has been placed on the matter of whether teachers live in the community in which they are teaching over the week end. It is maintained that in order to be of the best service in a particular school community a teacher should participate in and become a part of the social life of that community. With this idea in mind the following question was formulated: "Do you remain over Sunday in the community in which you teach?" The replies were as follows:

TABLE 9.—*Teachers spending week ends where teaching.*

	Number.	Per cent.
Teachers remaining in community Saturday and Sunday	485	48
Teachers not remaining in community Saturday and Sunday	477	47
Teachers remaining occasionally	45	5
Total number replying	1,007	100

In the first place, it should be noted that only 70 per cent of all the teachers replying to the questionnaire reported the above information, but of those reporting, 48 per cent, or slightly less than half, spent Saturday and Sunday in the community in which they were teaching. Since it will be recalled that 64 per cent of the teachers lived with parents or relatives, a large proportion of this group must be represented in the above 48 per cent.[9] While it was not found practical to trace each one of these individually in order to establish the proportion definitely, yet it was apparent that

[9] See p. 13.

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an unusually large percentage were absent from the community at probably the most opportune time for participation in the social activities and life of the people.

INCOME APART FROM SALARY.

The salaries of the teachers under the supervision of county superintendents during the school year 1918–19 were unusually low, as will be discussed more at length in Chapter VII of this study.[10] It will be seen that the median salary of the teachers in the one-teacher schools is as low as $411, with a large proportion receiving the small amount of $315. As teachers can scarcely eke out an existence with such an income, it was deemed advisable to discover, if possible, what proportion of the teachers had an income apart from the salary which they received for teaching.

From the 810 teachers replying, or 56 per cent of the entire number included in this study, it was found that only 25 per cent stated that they had an income apart from their remuneration for teaching. Only two-thirds of this number, or 137 teachers, gave the exact amount of this extra income, which ranges from $25 to $1,000. Approximately one-third of the group had an income of less than $100, and 25 per cent an income of not less than $300, apart from their teaching salaries. The median amount reported is $200, which also happens to be the mode, or the amount reported the greatest number of times. The information explaining how these teachers obtained additional income apart from their salaries was not given in most cases. However, a large proportion reporting the outside income have been usually men teachers who obtained from their small tracts of land a substantial livelihood independent of that received for their public-school work.

MONEY SAVED.

It is rather surprising to note that in spite of the fact that teachers in one-teacher rural schools receive such low salaries, approximately 40 per cent of the 1,024 teachers reporting, stated that they saved money. The amounts saved per year by these 420 vary from $10 to $400. For the group the median amount is $100, which also chances to be the mode. One-fifth of the group saved from $10 to $50 per year, while slightly less than this proportion reported saving from $200 to $400.

To make a more thorough study of the economic life of the teacher one should trace each individual to determine how it is possible to save money from the amount of salary received. It was found, as a rule, that the teachers thus reporting were about equally distributed between the following groups, namely, those living with parents or relatives, consequently having very low living expenses, and those reporting an income apart from the salary received for teaching. However, those not living with parents and not having an outside income independent of their teaching constituted for the most part the group that did not save any money or did not make reply.

DEPENDENTS.

Only one-half of the teachers gave information relating to this question, and of the number reporting, 32 per cent stated that part of their salary was consumed in supporting dependents. Usually these teachers have one or two such persons wholly or partially dependent upon them, the amount of money expended for such purposes ranging from $25 to $350, with a median amount of $175. On the whole, it appears that a fairly large proportion of the rural teachers were obliged either to support parents or relatives, or to give at least in part a substantial portion of their income for the maintenance of the home.

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[10] See p. 60.

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INSURANCE AND BENEFICIAL ASSOCIATIONS.

Out of the 973 teachers who answered the question whether they "carry life insurance," it is interesting to learn that only 267, or 27 per cent, reported in the affirmative. The amount of money invested in insurance varies from $5.20 to $150, with an average amount of $30 for the group. It would seem that these figures indicate a fairly large proportion both in number of teachers and amount of money expended in view of the very limited income of rural teachers.

Some of the teachers also reported having joined a beneficial association, with dues ranging from $5 to $15 per year. Only 13 per cent of those reporting had taken such precautionary measures against illness or accident. While the writer knows of two such organizations that have sprung up in the State within recent years, especially intended for the protection of teachers, it would seem from these facts that a very small proportion of the teachers in the one-teacher rural schools have availed themselves of such protection.

AMOUNTS EXPENDED FOR PROFESSIONAL LITERATURE.

An unusually large number of these rural teachers subscribed for educational magazines and reference books for teaching. The kind of material will be discussed in the next chapter. However, it should be noted that a fair proportion of their income was thus expended.

TABLE 10.—*Amounts expended for educational magazines.*

	Cost of magazines.									
	$0.50	$1.00	$1.50	$2.00	$2.50	$3.00	$3.50	$4.00	$5.00	Total.
Number of teachers.	7	122	455	89	46	36	15	6	10	786
Per cent	1	16	58	11	6	4	2	1	1	100

This table shows that 786 teachers paid subscriptions ranging from 50 cents to $5 for educational magazines. Approximately 58 per cent of the group invested the median amount of $1.50, and 14 per cent paid from $2.50 to $5 for such magazines.

TABLE 11.—*Amounts expended for professional literature and reference books.*

	Cost of professional literature and reference books.											
	$1.00	$2.00	$3.50	$5.00	$7.50	$10.00	$15.00	$20.00	$30.00	$40.00	$50.00	Total.
Number of teachers	62	63	44	74	25	24	10	12	3	1	3	321
Per cent	19	19	14	23	8	8	3	4	1	.....	1	100

Twenty-two per cent of the teachers reported investing money in professional literature and reference books ranging in amounts from $1 to $50; the median amount thus expended is $3.50. In the light of the fact that a very small proportion of rural teachers have had professional training, it speaks well for them that there is so strong a tendency among this rural-teacher group, receiving such limited incomes, to invest money ranging from $10 to $50 in educational publications.

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Chapter III.

THE TEACHER AT WORK.

In discussing the working conditions of the rural teachers in the one-teacher schools, it is the purpose not to examine them as elements of the organization of the school, but rather to consider them only in so far as they help to throw light on the status of the rural teachers, and explain the tremendous handicap under which they are obliged to work. A number of the topics touched upon herein but slightly might well be continued in a more intensive study.

NUMBER OF PUPILS.

As the size of the school is usually one of the first factors that is given consideration in studying conditions under which any particular group of teachers work, the teachers were asked in the questionnaire to state the number of pupils enrolled in their schools. Table 12 shows that 1,436 teachers reported in 1918 that their schools ranged in size from 3 to 68 pupils. The median number is found to be 26; the 25 percentile 19 and the 75 percentile 35, which facts show that 50 per cent of the teachers had schools under their charge ranging from 19 to 35 pupils.

TABLE 12.—*Number of pupils in one-teacher schools of 18 counties, followed by 8 typical counties.*

Number of pupils.	Total in 18 counties.	Typical counties.							
		1	2	3	4	5	6	7	8
3- 5	10	1	1	.....	.....	.....	1	1	.....
6- 8	27	1	.....	.....	2	.....	2	5	.....
9-11	50	1	2	1	7	.....	10	3	6
12-14	109	5	6	2	12	.....	12	6	4
15-17	126	4	2	3	15	4	17	11	10
18-20	156	6	6	2	17	11	13	12	9
21-23	132	4	4	3	16	9	7	7	11
24-26	157	8	4	2	24	11	13	2	16
27-29	120	4	3	5	11	13	10	1	11
30-34	205	1	4	7	21	32	8	3	12
35-39	138	5	1	6	20	18	13	1	15
40-44	120	3	3	4	10	28	2	.....	15
45-49	39	2	2	1	4	9	.....	.....	5
50-54	33	1	1	2	3	6	1	.....	4
55-59	8	.....	1	.....	.....	1	.....	.....	1
60 or more	6	.....	.....	.....	.....	1	.....	.....	1
Total	1,436	46	40	39	159	138	109	52	120
Median number of pupils	26	24	24	31	25	32	21	18	28

In view of the very difficult and laborious work usually attributed to teachers in rural schools, it is gratifying that only 25 per cent of the teachers reported schools with an enrollment larger than 35 pupils, and that only 6 per cent of the teachers had 45 or more children under their direct charge. Nevertheless, it should be remembered that in these schools generally all grades from the primary to the eighth and frequently the ninth and tenth were represented.

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There is also considerable variation in the size of schools among the 8 typical counties as found in Table 12, in that the median size of schools in county 7 is 18 pupils and in county 5 is 32. In 5 of the counties, however, the median number of pupils for each centers close about the median number for the entire group, namely, 26.

Just as we observe a marked variation in the pupil enrollment in one-teacher schools, so we may note a similar variation both in the number and kinds of grades.

TABLE 13.—*Distribution of grades in one-teacher schools.*

	Grades.										Total.
	1	2	3	4	5	6	7	8	9	10	
Number of schools		19	32	60	131	160	148	426	18	25	1,019
Per cent		1.8	3.1	5.9	12.9	15.7	14.5	41.8	1.8	2.5	100

It is noticeable in the preceding table that the range in grades extends from 2 to 10, with the median falling in the group reporting 7. Inasmuch as the largest number of schools are found to have 8 grades, it is evident that the county superintendents are carrying out the program suggested in recent years by the State department of public instruction of grading and grouping the pupils on an eight-grade basis, as has generally been practiced in the urban schools.[1]

Although a large proportion of the teachers, 72 per cent, have the pupils grouped in 6, 7, or 8 grades, yet it is quite significant that 23 per cent report 5 or less grades, and 4 per cent, 9 and 10 grades. The latter condition is usually found in schools in which the advanced pupils either repeat the grammar-school subjects or pursue the study of one or more high-school subjects which may possibly be added to the regular elementary school work. In the case of teachers reporting 5 grades, it is found that there are a number of one-teacher rural schools with large pupil enrollment who hold to the traditional scheme of grading their schools in 5 divisions.

A diversity of grading similar to that which prevails in the group as a whole is apparent in the different counties. Several of the counties show a fairly large proportion of schools with large pupil enrollment having 4 or 5 grades, while in two others 7 and 8 grade schools largely predominate, thus showing on the part of supervisory officers the pursuance of different policies of grading and grouping pupils.

NUMBER OF DAILY RECITATIONS.

The number of daily recitations in the program of the teachers in one-teacher schools for the 1,350 teachers reporting this information is shown in Table 14. The number of class recitations is found to range all the way from 9 to 50 per day. However, since only two teachers reported as having the almost incredible number of 50 recitations, it is probably safer to say that the upper range for the group is approximately 45 recitations per day. The median number is 25.6, falling within the largest group reporting 24 to 26 classes. The middle 50 per cent extends from 22 to 30 recitations. Probably the most significant fact revealed by these data is that 25 per cent of the teachers reported as having 30 or more class recitations per day, and 7 per cent of these 35 or more per day.

[1] Course of Study for Elementary Schools of Pa., 1918, State Dept. Pub. Instr. Koch et al., p. 9.

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TABLE 14.—*Number of recitations per day in one-teacher schools in 18 counties, followed by 8 typical counties.*

Number of recitations.	Total, 18 counties.	Typical counties.							
		1	2	3	4	5	6	7	8
9–11	4	1	.....	.....	1	3	2	.....	1
12–14	37	.....	.....	.....	3	7	1	.....	2
15–17	38	.....	.....	.....	5	6	3	1	3
18–20	182	.....	2	11	31	9	5	7	4
21–23	209	4	4	19	31	4	9	13	7
24–26	396	14	13	7	60	10	48	17	21
27–29	146	2	13	2	18	10	14	2	19
30–34	246	20	7	3	16	39	18	3	43
35–39	60	2	1	.....	2	28	1	.....	6
40–44	22	.....	.....	.....	1	7	1	1	7
45–49	8	.....	.....	.....	2	4	1	.....	.....
50	2	.....	.....	.....	.....	2	.....	.....	.....
Total	1,350	43	40	42	168	129	103	44	113
Median number of recitations.	25.6	30	27	23	25	31	26	24	30

Since the length of the school day is approximately 5½ hours, or 330 minutes, exclusive of intermissions, it can be seen that teachers having 30 or more recitations per day would average approximately 10 minutes per recitation. These facts certainly give some proof of the very strenuous work that teachers in one-teacher rural schools are obliged to do, especially in a school of 25 or more pupils.

In the 8 typical counties represented in the table the medians range from 23 in county 3 to 31 recitations per day in county 5. Although the teachers in three of these counties report 30 or more recitations, we are glad to point out that the data show that three others of the group have an average of 25 or fewer recitations.

Since approximately 20 per cent of the entire group, as we have already pointed out, have 20 or fewer recitations per day, there seems to be direct evidence, at least in some of the counties, of a tendency to lighten the teacher's work and to improve her efficiency by following the suggestions of the State department of education in 1918 in the Course of Study for the Elementary Schools.[2] In the suggested daily program contained in the State course, the allotted time provides for 23 recitations per day, including the opening exercises. It is doubtful, however, whether in the average daily program for a rural school, with a fairly large enrollment of pupils divided into 7 and 8 grades, the required work can be covered with less than 25 recitations per day.

In comparison with the very limited data that we have from studies relative to the topic of class recitations in rural schools of other States, it would appear that Pennsylvania ranks very well. In South Dakota the number of daily recitations in open country schools was found to be 26.65.[3] In the State of Colorado the number of recitations for all the schools in the counties, including villages, averaged 22. However, in the one-teacher schools the number of recitations in many cases is reported as high as 37.[4]

RELATION BETWEEN NUMBER OF PUPILS AND NUMBER OF DAILY RECITATIONS.

In representing the relation between the number of daily recitations and the number of pupils enrolled, it will be seen in Table 15 that in the group of 141 teachers reporting an enrollment of 18 to 20 pupils the range in daily class recitations extends from 12 to 45, with a median of 26. In the case of the group of 198, with an enroll-

[2] Course study for Ele. Schs. of Pa. State Dept. Pub. Instr. Koch et al., p. 8.
[3] Educational System of S. Dak. U. S. Bu. of Educ. Bul., 1918, No. 31, p. 114.
[4] Administration and Support of the Colorado School System. U. S. Bu. of Educ. Bul., 1917, No. 5, p. 76.

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ment of 30 to 34 pupils, there is an equally wide range in class recitations per day. Where the enrollment is over 35 there seems to be a tendency toward an increase in the number of recitations.

TABLE 15.—*Number of pupils in one-teacher schools in relation to number of daily recitations.*

Number of pupils.	Number of recitations.												Total number of pupils.
	9–11	12–14	15–17	18–20	21–23	24–26	27–29	30–34	35–39	40–44	45–49	50	
3–5	.....	1	1	1	3	2	.....	.....	.....	.....	.....	.....	8
6–8	.....	2	3	11	4	6	1	.....	.....	.....	.....	.....	27
9–11	.....	1	3	8	14	14	2	6	.....	.....	.....	.....	48
12–14	.....	8	5	11	14	32	15	8	1	1	.....	.....	95
15–17	1	2	1	13	32	40	11	10	1	.....	.....	.....	111
18–20	.....	4	2	16	19	53	15	24	2	1	2	.....	141
21–23	.....	3	2	27	25	27	9	25	6	2	1	.....	127
24–26	.....	4	4	18	21	53	20	27	8	2	.....	.....	157
27–29	.....	2	1	12	12	22	12	33	7	1	.....	.....	102
30–34	2	3	8	24	26	67	15	35	13	3	2	.....	198
35–39	1	.....	3	15	19	30	15	25	7	4	.....	1	120
40–44	.....	1	3	11	14	32	12	33	6	4	1	.....	117
45–49	.....	1	.....	4	2	7	7	11	4	1	.....	.....	37
50–54	.....	.....	2	7	1	5	5	8	3	.....	1	1	33
55–59	.....	.....	.....	2	.....	1	3	1	1	.....	.....	.....	8
60 and over	.....	.....	.....	1	1	2	2	.....	.....	.....	.....	.....	6
Total number recitations.	4	32	38	181	207	393	144	246	59	22	7	2	1,335

r=.20 P. E.=±.018.

Looking at this table with the number of recitations primarily in mind, it will be seen that the teachers reporting class recitations in the class intervals from 18 to 20 and from 24 to 26 per day show practically similar distributions in the number of pupils enrolled, with the median number of pupils approximately 25 in each distribution. Beyond 27 daily recitations there is an evident increase in the number of pupils enrolled. The correlation, while positive, is not high, namely r=.20 P. E.=±.018 (Pearson's Product-Moment Method). This means that schools having the largest number of pupils enrolled do not necessarily have the greatest number of class recitations per day.

In discussing the number of pupils, the grouping into grades, and the number of daily recitations, it has been the purpose primarily not in any way to make an exhaustive study of each of these phases of the school, but rather to throw light, if possible, on the tremendously large and difficult task that many of the teachers in one-teacher rural schools are called upon daily to perform. An average enrollment of 26 pupils with 7 or 8 grades and a daily program of 26 or more recitations were typical of the average working conditions, not to mention the group of nearly 50 per cent of the teachers whose pupil enrollment, number of grades, and daily recitations far surpassed these averages.

In discussing further the working conditions of the teacher, we shall take into account the information given in the questionnaire concerning the agencies which should help to make their work more efficient during service. Therefore, we shall tabulate the answers given to parts 13, 14, and 15 of the questionnaire as found in chapter 1.[5]

SCHOOL LIBRARIES.

In answer to the question whether there was a school library, only 1,044, or 72 per cent, of the teachers replied. In Table 16 it will be seen that 31 per cent answered affirmatively, 41 per cent negatively, and 28 per cent did not reply.

[5] See p. 3.

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TABLE 16.—*Per cent of teachers reporting school libraries, total per cent followed by 10 typical counties.*

	Total, 18 counties.	Typical counties.									
		1	2	3	4	5	6	7	8	9	10
Per cent reporting libraries	31	30	25	26	37	63	64	44	28	12	66
Per cent not reporting libraries	41	38	65	60	50	25	1	29	56	71	15
Per cent not replying	28	32	10	14	13	12	35	27	16	17	19

Great differences seem to exist among the separate counties. For example, in counties 5 and 10, school libraries were reported by 63 and 66 per cent of the teachers, respectively. On the other hand, counties 9 and 2 indicate the opposite extreme, in that only 12 and 25 per cent thus reported. The reason for these differences must be left largely to conjecture, since no definite information was given to indicate conclusively the exact causes.

The teachers were asked to state the approximate number of books filed in their libraries. These data are tabulated in the following table:

TABLE 17.—*Number of books in one-teacher school libraries.*

	Number of books.											Total.
	10	20	30	40	50	75	100	150	200	300	400	
Number of teachers reporting	58	85	64	31	76	30	43	23	14	5	4	423
Per cent	14	20	15	8	15	7	10	6	3	1	1	100

It will be noticed here that the range in number of books extends from 10 to 400. Nearly 50 per cent of the 423 teachers who gave this information reported libraries with less than 40 books, and 21 per cent reported libraries with 100 or more volumes. Although only 423, or 29 per cent of the whole number of teachers upon which this study is based, reported as having a definite number of books in their school libraries, yet these comparatively few teachers should be highly commended for the efforts exerted by them, frequently with the aid of pupils and ofttimes at a personal sacrifice.

ACCESSIBILITY TO OTHER LIBRARIES.

In reply to that part of question 13 of the questionnaire asking whether teachers had access to any other libraries for obtaining books and materials for teaching, it is interesting to note that 924, or 64 per cent, of the teachers replied, of whom 398, or 43 per cent, reported in the affirmative. In view of the slight variation among the different counties, this condition seems to have been quite prevalent throughout the counties represented in this study.

LOCAL INSTITUTES.

Since it is generally known that all teachers in Pennsylvania are obliged to attend either county or district teachers' institutes for five days, we shall not discuss in detail this agency as a means for the training of teachers. However, since most of the county superintendents in Pennsylvania encourage, or actively participate in the organization of many local or district institutes throughout their counties, the question was asked of the teachers, how far they availed themselves of this opportunity. There were 824 teachers who replied to this question, of whom 591, or 72 per cent, reported that they had attended such educational meetings. From this large proportion of

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affirmative replies it is evident that local institutes play a part in helping to develop teachers in the rural districts.

In order to learn what opportunities the teachers in rural schools have for personal growth and development, they were asked whether they were members of a reading circle. Thirty-one per cent of the 1,017 teachers replying said that they were members of such an organization. This low percentage may probably be expected because of the physical difficulties that teachers in rural communities must necessarily experience in attending such meetings.

PROFESSIONAL LITERATURE.

To ascertain further the opportunities of which teachers in the one-teacher rural schools individually availed themselves, they were requested to state the kind of professional literature for which they subscribed, such as educational magazines and reference books. It is shown in the previous chapter that teachers expended a fairly large percentage of their salaries for material of this kind. Of the entire number of teachers comprising this study, 1,114, or 77 per cent, gave this information, of whom 1,015, or 91 per cent, reported that they subscribed for educational magazines. Among the number thus reporting, 879 gave the names of the magazines as described in the following table:

TABLE 18.—*Educational magazines subscribed for by teachers in one-teacher rural schools*

Kind of magazines.	Number.	Per cent.
Normal Instructor	460	52.3
Primary Plans	36	4.1
Primary Education	28	3.1
Popular Education	17	2.0
Educational Journal	7	.8
Child Life	3	.3
Pennsylvania School Journal	3	.3
Progressive Teacher	2	.2
Teacher's Work	2	.2
IN COMBINATIONS.		
Normal Instructor and Primary Plans	156	18.0
Normal Instructor and Pathfinder	62	7.0
Normal Instructor, Primary Plans and Pathfinder	17	1.9
Normal Instructor and Primary Education	13	1.5
Normal Instructor and Popular Education	11	1.3
Primary Education and Popular Education	10	1.2
Primary Plans and Popular Education	9	1.0
Normal Instruction, Primary Plans, Popular Education	6	.7
Normal Instruction, School Journal, and Pathfinder	4	.5
Normal Instructor and Educational Journal	5	.6
Educational Journal and Pathfinder	3	.3
Normal Instructor and The Century	3	.3
Normal Instructor and Educational Foundations	2	.2
Normal Instructor and Current Events	1	.05
Primary Education and The Century	1	.05
Miscellaneous	18	2.1
Total	879	100

From the data at hand we have no evidence as to how far these selections of educational magazines carried out the suggestions of the list of educational journals as submitted by county superintendents in the different counties, but in talking this matter over with several of the superintendents of counties represented in this study, the writer learned that in many cases the teachers followed the suggestions of an agent in selecting magazines either separately or in attractive combinations.

Besides the educational magazines in the foregoing list, a small percentage of the teachers reported as subscribing for the following magazines and periodicals: Review of Reviews, Home Economics, Good Housekeeping, Popular Mechanics, New Century, World's Events, The American, World's Work, Youth's Companion, Saturday Even-

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ing Post, Geographic Magazine, Pathfinder, Current Events, Nature Study, Bird Life, newspapers, etc. None of the above was named more than 10 times, with the exception of the Pathfinder, which was named 48 times, Current Events, 35 times, and Geographic Magazine, 20 times.

Relative to reference books, approximately 22 per cent of the teachers gave information. The following were named most frequently: The Encyclopedia, the Dictionary, the Standard Dictionary of Facts, Century Book of Facts, Stoddard's Lectures, Book of Knowledge, Books on Teaching, Books on Theory, Story Books, Classics, Public School Methods, Supplementary Text Books, etc.

SUPERVISION BY COUNTY AND ASSISTANT COUNTY SUPERINTENDENTS.

Inasmuch as it is generally understood that scores of teachers in the rural schools are new and inexperienced in the work and frequently have very limited academic and professional training, it was deemed advisable to determine, to some extent at least, how much time was actually spent by county and assistant county superintendents with rural teachers for supervisory purposes. These data are tabulated in Table 19, of which Division A shows that the time spent by county superintendents in supervision, according to the replies of 1,006 teachers from 18 different counties ranges from a quarter of an hour to eight hours during the school year. The median is found in the group of 404, or 40 per cent of the number, who reported supervision for a period of one hour. It is most significant that 66 per cent of the teachers replied that county superintendents could spend only one hour or less in supervising their teaching work.

TABLE 19.—*Number of hours per school year teachers in one-teacher schools are supervised—Distribution for 18 counties, followed by 8 typical counties.*

DIVISION A.—COUNTY SUPERINTENDENTS.

Number of hours.	Total distribution, 18 counties.	Typical counties.							
		1	2	3	4	5	6	7	8
¼	46	.....	1	.....	.....	17	4	2	.....
½	215	4	12	.....	6	45	12	16	23
1	404	12	31	.....	8	38	15	38	35
1½	71	6	4	.....	1	4	2	13	5
2	159	7	6	3	1	10	8	3	8
3	38	.....	2	2	1	2	4	.....	3
4	39	.....	.....	4	.....	1	.....	1	1
5	17	.....	.....	1	.....	.....	.....	.....	.....
6	4	.....	.....	.....	.....	.....	.....	.....	.....
7	6	.....	.....	3	.....	.....	.....	.....	.....
8	6	.....	2	2	.....	.....	.....	.....	.....
Total	1,005	29	58	15	17	117	45	73	75

DIVISION B.—ASSISTANT COUNTY SUPERINTENDENTS.

Number of hours.	Total distribution, 18 counties.	Typical counties.							
		1	2	3	4	5	6	7	8
¼	9	3	.....	.....	.....	.....	1	.....	1
½	68	6	2	.....	2	20	6	.....	6
1	175	.....	5	.....	2	44	12	.....	12
1½	54	.....	3	.....	1	16	2	.....	2
2	204	3	26	.....	8	25	10	.....	10
3	78	.....	4	.....	2	20	7	.....	7
4	36	.....	4	.....	3	.....	2	.....	2
5	13	.....	2	.....	.....	3	1	.....	1
6	5	.....	.....	.....	.....	1	1	.....	1
7	5	.....	1	.....	1	1	.....	.....	.....
8	10	.....	3	.....	.....	.....	2	.....	2
Total	655	12	50	.....	19	130	44	.....	44

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In observing the 8 typical counties in Division A, it is apparent that the range and median time spent in supervision are practically the same in all the counties with the exception of counties 3 and 7—the counties among the group according to Division B, that do not have supervision by assistant county superintendents. This is due to the fact that by law counties with less than 200 teachers are not entitled to an assistant superintendent:[6] But note the contrast—in county 3, having 22 one-teacher schools out of the approximate 60 schools supervised,[7] the teachers in the one-teacher schools reported supervision ranging from 2 to 8 hours; on the other hand in county 7 in which the number of schools approaches 200, with approximately 125 one-teacher schools,[7] very little supervision can necessarily be given to the rural teachers, as has been shown by the replies from two-thirds of the teachers, who stated that they have received one hour or less of the superintendent's time in supervision. While this latter county superintendent probably gave as much time in supervision to the schools as most of the others representing the group of 8 counties, the extra supervision received by the teachers in the other counties through their assistant superintendents was practically denied his county with 125 one-teacher schools by the rather arbitrary State law.

In Table 19, Division B, 655 teachers reported the amount of time spent in supervision by assistant county superintendents in their schools, respectively. While the range in time is the same as in the case of the county superintendents, the median is found in the group of teachers reporting two hours of supervision during the school year. Since 54 per cent, or over one-half, of the teachers in counties having assistant county superintendents reported supervision of two or more hours during the school year, it is apparent that teachers received, on the basis of the data reported, considerably more supervision from assistant county superintendents than from county superintendents. This condition would naturally be expected, inasmuch as the county superintendent is responsible not only for the supervision of every school under his jurisdiction, but also for the administration of his office. It seems remarkable that these school officials could devote as much time to the schools as herein reported, not only because of insufficient professional help, but in many cases because of the lack of sufficient clerical help and proper office facilities.

At this point the reader's attention should be called to Table 1 in Chapter I, in which are set forth certain difficulties relative to supervision in the various counties that county superintendents are obliged to face, such as the large number of one-teacher schools, sparsity of population, and size of county. To study the first of these problems more specifically, in county 41 the superintendent with only one assistant has 321 teachers under his supervision, of whom 197, or 61 per cent, are employed in one-teacher schools; in county 28 the superintendent with also one assistant superintendent has under his charge 307 teachers, with 197, or 64 per cent, in one-teacher schools; while in county 20 there are 373 teachers, with 311, or 83 per cent, one-teacher schools, likewise supervised by the superintendent with the aid of only one assistant superintendent. In counties 36 and 66 there are 650 and 571 teachers under the county superintendent's supervision, with 361 and 350 teachers in one-teacher schools, respectively; but the superintendent in the former county has 3 assistants, while in the latter the superintendent has but 2, although the two counties have practically the same number of one-teacher schools.

It would seem that in order to provide additional professional supervision for rural teachers, instead of using the arbitrary plan providing for one assistant for 200 to 400 teachers, and one additional assistant for 400 to 600 et cetera,[6] the number and distribution of one-teacher schools should be given careful consideration, to say nothing a

[6] School Laws of Pennsylvania, and appendix, 1919, Art. XI, sec. 1126.
[7] Teachers' directories issued by county superintendents, 1919–20.

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this time of such other factors as the size of the counties, sparsity of population, and number and size of school districts.

It is not the purpose to elaborate on these data any further or to suggest possible constructive measures, but rather to set forth the situations in the State as they exist, namely, the lack of professional supervision and assistance given to teachers in the rural schools, and emphasis upon the need for immediate additional assistance for county superintendents, in order to make the time spent in supervising rural schools at all comparable with that devoted to supervision in borough and city schools. These conditions certainly must tend to discourage many of the teachers without any previous experience, and undoubtedly cause scores of them to enter urban schools or leave the profession altogether.

SCHOOLS VISITED BY SCHOOL BOARDS.

Since the school laws of Pennsylvania provide that "boards of school directors shall exercise general supervision over the schools of their respective districts, and shall, except in districts having district superintendents or supervising principals, by one or more of their number visit every school in the district at least once a month," [8] the question was asked of the teachers in the rural schools whether the school boards had visited their schools the previous year. Of the entire number of teachers included in this study, 694, or 48 per cent, supplied this information. Sixty-nine per cent of those replying say that their schools were visited by the school boards, and the number is distributed in the following table:

TABLE 20.—*Number and per cent of school directors visiting one-teacher rural schools.*

	Number of directors.					
	1	2	3	4	5	Total.
Number of schools represented	141	124	108	58	65	496
Per cent	28	27	21	11	15	100

The median number of directors visiting schools is found in the group who reported visits by two directors, and in only 65, or 15 per cent, of the schools was it reported that the entire board consisting of five members observed the teacher actually at work.

TABLE 21.—*Number and per cent of visits made by school directors in the one-teacher schools.*

	Number of visits.										
	1	2	3	4	5	6	7	8	9	10	Total.
Number of schools represented	294	88	33	15	18	5	12	8	8	2	483
Per cent	61	18.2	6.9	3.2	3.7	1	2.4	1.6	1.6	0.4	100

This table shows that the median number of visits made by school directors in one-teacher schools is found in the group reporting one visit. It may be interesting to point out that 294 reporting one visit comprise 61 per cent of the group. The school code, it should be recalled, provides that the boards shall exercise general super-

[8] School Laws of Pennsylvania, and appendix, 1919. Art. IV, sec. 408.

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vision over the schools, but it does not specifically refer in any sense to their supervision of instruction.

This brings us to the question of whether school boards do give consideration to the judgment of county superintendents in the election or reelection of teachers to positions in their school districts. In reply to this question, as found in section 6 of the questionnaire, unfortunately only 50 per cent of the teachers have given this information. These replies are tabulated in the following table:

TABLE 22.—*Consideration that school boards give to judgment of county superintendents in the election or reelection of teachers.*

	Number.	Per cent.
No consideration	169	23
Little consideration	342	47
Much consideration	203	30
Total	725	100

In studying the above table and discounting the fact that only one-half of the teachers from the 18 counties comprising the study furnished this information, it is most significant to learn that 70 per cent of the teachers reported that the school boards gave none or very little consideration to the judgment of county superintendents in exercising their very important function of electing or reelecting teachers to the schools in their respective districts. When it is recalled that 31 per cent of the teachers reported that the school boards do not visit their schools, one can not help but point out the fact that teachers certainly receive very little intelligent consideration from many school boards as far as their professional welfare is concerned. These conditions emphasize all the more strongly the need for a centralized county organization, especially in its relation to local school boards, if the teachers in the one-teacher schools are to be assured of the consideration which they so rightly deserve.

COMMUNITY INTEREST AND SUPPORT.

In closing this discussion of the conditions under which the teachers in the rural communities are obliged to work, it is of interest to see just what support and cooperation the teachers in the one-teacher rural schools received from the patrons and residents of the school community. The teachers were asked to give this information in several parts of the questionnaire. In the first place they were asked, "Do you take part in a parent-teachers' association or any kind of community activity held in your school building?" The following table contains the replies:

TABLE 23.—*Teachers reporting parent-teachers' organizations and other community activities.*

	Number.	Per cent.
Teachers reporting parent-teachers' association or other community activities	293	28
Teachers who do not have such organizations	720	72
Total	1,013	100

It is quite apparent from the above replies that teachers in the rural communities have very little community cooperation and support in an organized way as is shown by the small percentage, 28, who reported such an organization. In some cases it may have been impossible to have such a community organization, but we are glad

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to learn that teachers in many rural schools made it a practice to visit the homes in their respective communities and that the parents also frequently visited the schools. In reply to the direct question covering these facts, 515 teachers, or 36 per cent, reported that it was their practice to visit the homes of parents. The average number of homes visited by the group thus reporting is 7. At the same time, 483, or approximately 33 per cent, of the parents showed an interest in the work of the schools by making frequent visits during the school year. The average number of visits reported by this group is found among those who received eight such visits from parents.

In communities having one-teacher schools, interest and cooperation in the work of the public schools on the part of patrons and residents frequently has a very direct bearing upon the kind and condition of the school and especially upon the social and economic life of the teacher who is called upon to serve in such a community. This support and interest on the part of the citizens is undoubtedly as vital to the teacher's personal welfare as the support of county and local school officials is to her professional welfare.

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Chapter IV.

ACADEMIC AND PROFESSIONAL TRAINING.

Because of the important part which the teacher's academic and professional training plays in the conduct of school, it is most essential that in a study of the rural teacher this phase should receive careful analysis. The facts in this discussion are based entirely upon the replies in the questionnaires furnished by the teachers themselves.

ELEMENTARY EDUCATION.

Table 24 shows for the year 1918 the elementary education of a group of 1,440 teachers in the one-teacher rural schools in 18 counties of the State. The range in years of the 1,192 teachers, or 80 per cent of the total group, receiving their early education in townships extends from 5 to 12 years, and of the 248, or 20 per cent, in boroughs, from 5 to 11 years. The median length of elementary education in both cases is found in the group reporting as having an elementary education of 8 years, which is the equivalent of 68.2 months on the basis of 7.6 months, the average length of school term for townships, and 70.8 months on the basis of 8.6 months, the average length of term for boroughs.[1]

TABLE 24.—*Elementary education in years of teachers in one-teacher schools in townships and boroughs—Total distribution and per cent for 18 counties.*

DIVISION A—IN TOWNSHIP SCHOOLS.

	Years.								
	5	6	7	8	9	10	11	12	Total.
Total distribution 18 counties	20	114	164	423	228	147	66	30	1,192
Per cent	2	9	14	36	19	12	5	3	100

DIVISION B—IN BOROUGH SCHOOLS.

	Years.								
	5	6	7	8	9	10	11	12	Total.
Total distribution 18 counties	4	28	46	119	26	23	2	.....	248
Per cent	2	11	19	48	10	9	1	.....	100

There is much similarity between Division A and Division B, as shown by the ranges and the medians. Probably the greatest difference between the two is found in their respective distributions, the former showing 39 per cent attending elementary schools for a period longer than 8 years, the latter only 20 per cent for practically the same length of time. It is probable that, among those teachers who report elementary

[1] See Table 46, p. 66.

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education for a period of 11 or 12 years, high-school training may be included, inasmuch as they do not answer the part of the questionnaire pertaining to secondary education. This is more likely to be true in the case of the teachers receiving their elementary training in townships rather than in boroughs, since only 36 per cent of the former completed this education within the period of 8 years, as compared with 48 per cent of the latter.

These facts can be explained in part in that rural schools in townships frequently have classes that extend beyond the eighth grade of the elementary school. It is not at all uncommon to find nine grades and sometimes more in one-teacher rural schools. The highest, or "A," class in many of these schools frequently spends three or more years repeating the more advanced elementary-school subject, with the addition, probably, of algebra or Latin or some other high-school subjects, depending probably somewhat on the ability and choice of the individual teachers. This type of school, however, is rapidly passing out of existence, and in its place many school districts have developed a high school of the second or third class, or they have transferred the pupils to another district for instruction beyond the elementary grades.

In contrast with these facts, it is most interesting to note that the percentage of teachers attending elementary schools for a period of 7 years or less is as high as 32 per cent for those securing their early education in boroughs and 25 per cent for those receiving their early training in townships.

SECONDARY EDUCATION.

In examining Table 25, which shows the secondary education for the same group of 1,440 teachers in one-teacher rural schools from 18 counties of the State, it will be observed that 39 per cent of the teachers reported in the questionnaires that they had had no secondary education. Seven per cent had attended a secondary school for less than one year, 4 per cent for one year, 11 per cent for two years, 17 per cent for three years, and 22 per cent reported as having completed a four-year secondary-school course. It is only fair to state that inasmuch as the proportion of two and three year high schools available among the high schools of the State was, for example, 90 per cent in 1908 and 64 per cent in 1918, at least three-fourths of those reporting as having attended high school for two and three years were usually graduated from their high schools.[2] The 98 teachers stating that they had attended a secondary school less than a year in most cases attended a private academy, of which there are quite a number throughout Pennsylvania, ranking about the same as the high school.

TABLE 25.—*Secondary education of teachers in one-teacher schools—Total distribution for 18 counties, followed by distribution in 8 typical counties.*

DIVISION A—DISTRIBUTION BY YEARS.

	Teachers reporting.	Without secondary education.	With secondary education.	Years of secondary education.				
				Less than one year.	One year.	Two years.	Three years.	Four years.
Total distribution (18 counties)	1,440	566	874	98	57	157	247	315
Distribution in typical counties:								
1	46	19	27	1	1	6	11	8
2	99	63	36	4	1	5	17	9
3	92	39	53	3	2	4	11	33
4	105	38	67	4	2	6	22	31
5	110	45	65	20	9	19	9	8
6	40	20	20	3	1	2	5	9
7	65	13	51	2	3	6	15	25
8	109	46	73	17	7	20	11	18

[2] Eleventh An. Rept. High School Inspectors, State Dept. of Educ. of Pa., July, 1918, p. 14.

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TABLE 25.—*Secondary education of teachers in one-teacher schools. Total distribution for 18 counties, followed by distribution in 8 typical counties*—Continued.

DIVISION B—DISTRIBUTION IN PER CENT.

	Teachers reporting.	Without secondary education.	With secondary education.	Secondary education in per cents.				
				Less than one year.	One year.	Two years.	Three years.	Four years.
Per cent	100	39	61	7	4	11	17	22
Distribution in typical counties:								
1	100	40	60	2	2	13	25	18
2	100	64	36	4	1	5	17	9
3	100	42	58	8	2	4	12	37
4	100	24	76	4	2	8	21	31
5	100	40	60	19	8	18	8	7
6	100	50	50	7	3	5	13	22
7	100	22	78	3	5	9	23	38
8	100	39	61	16	6	18	10	11

Among the group of 39 per cent constituting the teachers who reported no secondary education, it must be pointed out, as will be discussed more in detail in the next chapter,[3] that they held all types of certificates, and that 60 per cent of those holding permanent certificates reported that they had no secondary education. At the same time the answers showed that teachers just entering the profession with provisional certificates had the highest percentage of secondary school training.

Another consideration should be taken into account when interpreting these data, namely, that a small percentage of the teachers who reported no secondary education attended elementary schools in rural communities with 9 and 10 grades, of the type described earlier in this chapter. Then, again, a small proportion of those reporting only elementary educational preparation attended an academy or local county normal school for a period of six weeks before securing a teacher's certificate. In tracing the education of each teacher in a number of typical counties, it was found that this group constituted from 10 to 15 per cent out of the 39 per cent reporting no secondary education. This means, after making all possible deductions on the basis of the answers given by the teachers themselves, that on a very conservative estimate the number of teachers not having had any secondary education is approximately 25 per cent.

This conclusion is further corroborated by a recent study in teacher shortage made by the bureau of certification and training of teachers of the State department of public instruction, in which it is set forth that 25 per cent of the teachers holding provisional and professional certificates have had only elementary education, and that 2 per cent out of these 25 per cent had not even completed this elementary training.[4] This information was submitted to the State department by the county superintendents, and covers the teaching force for the current year 1919–20.

Two facts, however, should be kept in mind in analyzing the data issued by the State department: First, that teachers holding permanent certificates are not included, which, on the basis of this study, would undoubtedly raise the percentage of teachers not having had secondary education;[5] and second, that the data comprise all teachers under county supervision rather than the teachers in one-teacher schools, exclusively, tending therefore to lower the percentage of teachers without secondary education, since a much larger proportion of the teachers in one-teacher rural schools hold provisional and professional certificates than in the two-teacher rural, village, and borough schools.[6]

These facts would all the more strongly warrant the conclusion that, as before stated, 25 per cent of the teachers without secondary education in one-teacher schools

[3] See p. 48.
[4] Study in Teacher Shortage, Dept. Pub. Instruction of Pa., 1919-20 (unpublished).
[5] See p. 49.
[6] See pp. 39, 40.

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is surely not too high an estimate, and the exact per cent would likely be between the 25 per cent and the 39 per cent recorded by the teachers themselves in the questionnaires.

On the basis of the data presented, applying these percentages to the 10,000 teachers in one-teacher rural schools of the entire State, it would mean that approximately—

3,900 began teaching without secondary education; of these, 2,500 from the elementary schools without any additional training, 1,400 with ninth and tenth grade advanced elementary training.
700 with secondary training of less than one year.
400 with secondary training of one year.
1,100 with secondary training of two years.
1,700 with secondary training of three years.
2,200 completed a four years' secondary course.

10,000, total.

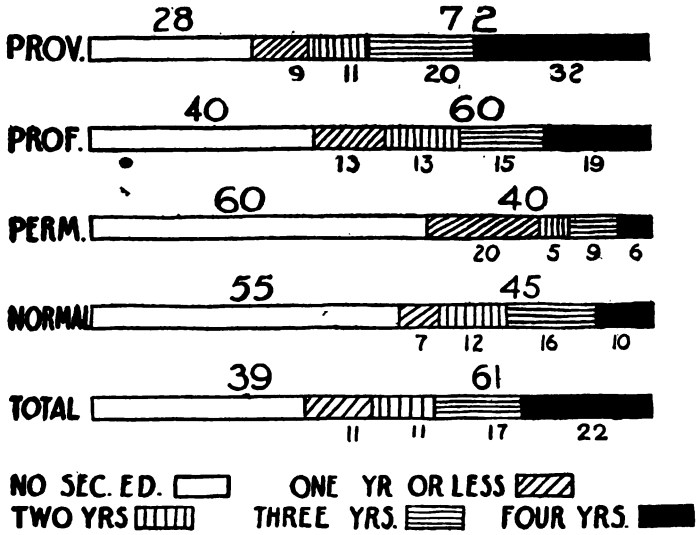

DIAGRAM 1.—Percentage of teachers in one-teacher rural schools, by certificates, on the basis of their secondary education.

The secondary education of the teachers represented in the 8 typical counties in Table 25, Division B, following the distribution for the entire group of 18 counties, shows considerable variation. In the first place the range in percentage of teachers having secondary education extends from 36 to 78. Among those who have finished a four-year course in a high school or an academy, the difference in per cent between the lowest county and the highest one is 31, county 5 indicating 7 per cent and county 7 indicating 38 per cent. While there is evidently considerable variation in the counties in the number of teachers spending less than four years in high school, the counties showing the large proportion of teachers with two and three years of high-school education possess a goodly number of two and three year high schools, respectively, throughout their counties.[7]

Counties 5 and 8 stand out prominently because of the large number of teachers who reported attending secondary schools less than one year. This may be due in part to the fact that private academies are located in these counties offering both to teachers in service and to prospective teachers a spring or summer normal course for a period of six weeks. While it is not our purpose at this point to discuss fully these academies which conduct normal school courses, yet the influence of these schools in

[7] Eleventh An. Rept. Pa. State H. Sch. Inspectors, p. 14.

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the counties where they are located is quite marked, as will be shown in the latter part of this discussion dealing with the training of teachers in service. The counties that have this type of school show a higher percentage of teachers with academic or professional training than those counties which do not possess schools offering similar opportunities either for prospective teachers or for teachers in service.

In comparison with other States from which we have data, it appears that Pennsylvania on the basis of this study does not rank very well in the number of teachers with secondary education in one-teacher rural schools. It should be remembered that the percentages for Pennsylvania are strictly for one-teacher schools and that in some of the other States cited all rural schools, including village schools of two and more than two teachers, were considered.

TABLE 26.—*Education of teachers in one-teacher rural schools.*

	Alabama.[1]	Colorado.[2]	Nebraska.[3]	Pennsylvania.	South Dakota.[4]	Virginia.[5]
Elementary education only	16.0	7	4	[6] 25	.....	9.6
One year of high school or less	10.1	.....	9	18	.....	3.5
Two years of high school	17.2	16	16	18	.....	9.4
Three years of high school	18.0	.....	15	17	.....	10.2
Four years of high school	38.0	[7] 35	36	22	[7] 58	[7] 41.0

[1] Educational Study of Alabama, U. S. Bu. of Educ., Bul., 1919, No. 41, p. 349.
[2] Administration and Support of the Colorado School System, U. S. Bu. of Educ. Bul. 1917, No. 5, p. 74.
[3] The Rural Teacher of Nebraska, U. S. Bu. of Educ. Bul. 1919, No. 20, p. 31.
[4] Educational System of S. Dakota, U. S. Bu. of Educ. Bul., 1918, No. 31, p 213.
[5] Virginia Public School Survey, p. 334.
[6] See explanation p. 31.
[7] Per cents do not total 100.

PROFESSIONAL TRAINING.

To consider the professional training of this group of teachers in the one-teacher rural schools means, under the present certificate system in Pennsylvania, practically the exclusive consideration of those teachers who have attended a State normal school. This information is tabulated in Table 27, which shows that, out of 1,445 teachers, 1,105, or 76 per cent, report having had no State normal school training. This indicates that the remaining 340, or 24 per cent, attended a normal school for a period ranging from 6 weeks to 4 years in length, of which number 264, or 18 per cent completed the normal school course. It will be seen that this percentage of normal school graduates is higher than the average, which is 14 per cent for the entire State of Pennsylvania, based on the reports of 28 counties in 1919, as will be explained in the next chapter.[8] This helps to substantiate the view that a good proportion of the better educated and professionally trained teachers in each of the counties represented in this study answered the questionnaires.

TABLE 27.—*Distribution of teachers on the basis of normal school education in preparation for teaching—Total distribution for 18 counties, followed by 8 typical counties.*

	Teachers reporting.	Without normal school education.	With normal school education.	Normal school education.					Normal school graduates.	Per cent with normal school education.	Per cent normal school graduates.
				Less than 1 yr.	1 yr.	2 yrs.	3 yrs.	4 yrs.			
Total distribution 18 counties	1,445	1,105	340	40	42	142	91	25	264	.....	.....
Per cent	100	76	24	3	3	10	6	2	18	.....	.....
Distribution of Typical Counties:											
1	47	34	13	9	2	2	.....	.....	2	28	4
2	99	43	60	6	6	21	20	7	55	61	56
3	62	43	19	4	2	8	5	.....	13	31	21
4	40	28	12	.....	5	5	1	1	5	30	13
5	110	68	41	2	16	18	4	1	37	37	34
6	53	37	16	3	1	4	5	3	12	30	23
7	107	83	24	5	3	10	3	3	13	22	12
8	119	99	22	11	2	5	4	.....	9	18	7

[8] See p. 40.

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The largest group of teachers, namely 40 per cent, of those reporting State normal school education had attended for a period of two years, indicating that these either had graduated from a four-year high school and spent two years in a normal school, or had attended a State normal school for a period of two years under what was known as the two-year course which existed for a period of years prior to the year 1904.[9] During that time it was possible for a student to complete the elementary school and graduate from a normal school in two years without any preliminary education. From 1904 to 1914, normal schools in Pennsylvania had what was known as a three-year course, which admitted students either from an elementary school or from a high school, meaning that the 6 per cent group in the table attending a normal school for three years in most cases had entered the school without any high-school education. The 25 teachers reporting that they had attended a normal school for four years are usually persons who had gone to the normal school directly from the elementary grades, thereby making it serve both as the secondary school and the professional training school.

In the individual counties following the general distribution, the range in per cent of teachers having attended a normal school extends from 18 to 61, while for those who completed the normal course, th per cents range from 4 to 56. Counties 2 and 5, having the largest number of teachers who attended and graduated from a normal school are 2 of the 13 counties of the State in which State normal schools are located.

Undoubtedly the most significant fact as brought out in these data is that at least 76 per cent of the teachers in the one-teacher schools entered upon their work without professional training in State normal schools by the examination route, made possible by the Pennsylvania certificate system, which will be discussed more at length in the next chapter. We have very little comparative data from other States pertaining exclusively to the rural school teacher, yet from the meager information we do have, it appears that Pennsylvania ranks very low. For example, in South Dakota, according to the recent school survey of that State, it is estimated that 45.8 per cent of the teachers attended professional schools and that 54.2 per cent entered the rural schools without professional training.[10] In Alabama it is also estimated that 63.6 per cent of the teachers teaching in rural and village schools had no professional preparation.[11] While the rural schools as defined in both of these surveys may not be as closely confined to the one-teacher school as in this study, yet the comparison is most significant in that Pennsylvania, on the basis of the number of cases represented in this discussion, ranks lower than a typical western and a typical southern State.

In New York State only 8 per cent of the teachers in one-teacher schools are graduates of State normal schools, a percentage considerably lower than that for Pennsylvania.[12] However, "approximately 60 per cent of the teachers in these schools have had one year of professional training in training classes either added to four years of high school, or added to an incomplete high-school course."[13] Since the State of Pennsylvania has no teacher training institutions specially intended to prepare elementary teachers other than the 13 State normal schools, it would seem at least on the basis of comparison with our neighboring State New York, with its 11 State normal schools, that these facts give us additional evidence in favor of the immediate establishment of larger and more adequate teacher training facilities in Pennsylvania.

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[9] Pennsylvania State Nor. Sch. catalogues. Proc. State Normal School Principals.
[10] Educ. System of S. Dak., U. S. Bu. of Educ. Bul., 1918, No. 31, p. 231.
[11] Educ. Study of Alabama, U. S. Bu. of Educ. Bul., 1919, No. 41, p. 349.
[12] See p. 40.
[13] Engelhardt. "The Teaching Profession in the State of New York."

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TABLE 28.—*Distribution of normal-school graduates in one-teacher schools for 18 counties on the basis of preliminary secondary education.*

	Normal school graduates.	Without secondary education.	With secondary education.	Years of secondary education.				
				Less than 1 year.	One year.	Two years.	Three years.	Four years.
Total distribution 18 counties	264	144	120	4	13	32	43	28
Per cent	100	55	45	2	5	12	16	10

An important observation that can be made from these data is the great variation in the amount of time actually spent in a normal school. This can probably be best explained by observing Table 28, which shows the percentage of the group of normal school graduates referred to in Table 27 from the standpoint of their preliminary secondary education. The range in time spent in a secondary school extends from six weeks to four years. Of the 45 per cent, or less than one-half, of the normal school graduates reporting as having had preliminary secondary education only 10 per cent had finished a four-year high-school course, and 16 and 12 per cent stated that they had three years and two years of high-school education, respectively. It is, indeed, most interesting to note that 55 per cent of the teachers holding normal-school certificates or diplomas had gone directly to a State normal school without any secondary education.

These data help to explain the tremendous variation in length of time spent in the normal schools by those who had graduated, as was brought out earlier in this discussion. Since the normal schools in Pennsylvania have been admitting students with all kinds of academic preparation, ranging from the pupil who had finished the eighth grade in the elementary school to one who had completed a four-year high-school course, it is quite evident that one must naturally expect to find such tremendous variations both in the case of the preliminary secondary education and in that of the time spent in the normal school.

ACADEMIC AND PROFESSIONAL TRAINING DURING SERVICE.

The different kinds and amount of academic and professional training of which the teachers in the one-teacher schools avail themselves during service are tabulated in Tables 29 and 30. In the first place, it should be noted that only 1,085, or approximately 75 per cent, of all the teachers who replied to the questionnaire gave this information. Of those who reported, 676, or 62 per cent, have had no academic or professional schooling since entering the teaching profession. Of the 38 per cent who reported such supplementary training 10 per cent attended summer academies, 8 per cent summer local or county normal schools, 12 per cent summer normal schools, and 6 per cent summer colleges, all ranging from one to four summer terms of six weeks each. In studying more in detail the kind of institution selected by these teachers in individual counties, it was found that two factors predominated in determining this selection—first, the kind of certificate held by the teacher, and second, the kind of school most accessible. The former was found true from the fact that teachers usually select a school that helps them to obtain the academic schooling in such branches as algebra, general history, plane geometry, etc, studies in which they are called upon to pass an examination to qualify for either a professional or permanent certificate. This will be more specifically discussed in the next chapter in considering the academic and professional preparation and training in service of the teachers holding the different types of certificates.

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TABLE 29.—*Supplementary academic and professional training of teachers during service—Total distribution for 18 counties followed by 8 typical counties.*

	No training during service.	Training during service.	Summer academy.					Summer local or county normal school.					Summer State normal school.					Summer college.					Correspondence and miscellaneous.
			Weeks.				Total.	Weeks.				Total.	Weeks.				Total.	Weeks.				Total.	
			6	12	18	24		6	12	18	24		6	12	18	24		6	12	18	24		
Total distribution (18 counties).	676	409	41	37	18	13	109	48	29	5	11	93	64	28	18	19	129	44	12	4	..	60	18
Typical counties:																							
1	22	16	1	1	..	..	2	1	3	2	3	9	2	1	..	1	4	1	..	..	..	1	..
2	19	17	..	..	..	..	..	5	3	3	2	13	..	..	..	2	2	2	..	..	..	2	..
3	65	23	1	..	..	..	1	..	..	..	..	..	4	3	2	6	15	5	1	..	..	6	1
4	40	21	5	..	2	1	8	1	1	..	..	2	4	3	..	..	7	2	1	..	..	3	1
5	76	34	2	1	..	..	3	..	..	..	..	..	13	5	2	2	22	4	2	1	..	7	2
6	56	46	7	6	3	5	21	4	3	1	3	11	3	3	2	1	9	2	1	1	..	4	1
7	39	9	..	..	..	..	..	1	1	..	..	2	1	..	..	..	1	4	..	1	..	5	1
8	56	53	10	5	3	1	19	6	9	4	2	21	..	5	3	2	10	2	..	..	..	2	1

TABLE 30.—*Supplementary academic and professional training of teachers during service in per cent—Total distribution for 18 counties followed by 8 typical counties.*

	Per cent without training during service.	Per cent with training during service.	Summer academy.	Summer local or county normal school.	Summer State normal school.	Summer college.	Correspondence and miscellaneous.
Total per cent (18 counties)	62	38	10	8	12	6	2
Typical counties:							
1	58	42	5	24	10	3	..
2	53	47	..	36	6	5	..
3	74	26	1	..	17	7	1
4	66	34	13	3	11	5	2
5	69	31	3	..	20	6	2
6	55	45	20	11	9	4	1
7	81	19	..	4	2	11	2
8	51	49	18	19	9	2	1

The second factor above referred to may best be illustrated by looking into the supplementary training of this group of teachers as shown in the 8 typical counties constituting the second part of the table. For example, in counties 3 and 5 the larger proportion of the teachers attended the summer session at one of the State normal schools. Since each of these counties has a State normal school located within its boundaries, naturally the school is most accessible for the teachers, and this caused them to select this school intended primarily for teacher training. On the other hand, in counties 6 and 8 a large proportion of the teachers select courses in summer academies and local or county normal schools. Both of these counties show a very small proportion of teachers attending a summer State normal school. According to the information obtained from the county superintendent, in the case of county 8 there are two private academies and four summer local or county normal schools. The latter are usually conducted by high-school principals in certain parts of the county who, probably with the aid of one or two additional teachers, provide a number of academic courses especially intended to prepare teachers to qualify for examinations, either for additional subjects to the certificate already held or possibly for the next higher certificate. In many cases the professional training in these schools is limited to a class in school management, using one of the well-known traditional texts in the development of the subject.

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One other observation should be pointed out. It was found that the counties which show the lowest percentage of teachers who avail themselves of the opportunity of supplementary education or training are usually the ones which have the least number of available schools offering courses during the summer months. It seems very evident from these facts that the accessibility of the school or schools found in any particular county has a direct bearing on the kind and amount of academic and professional training of teachers in rural schools.

It would seem from the material presented in this discussion, indicating in the first place a very low proportion of teachers having secondary education and a still larger proportion that have no professional training, that in order to raise the standards of the teaching force in our rural schools the matter of providing a larger number of

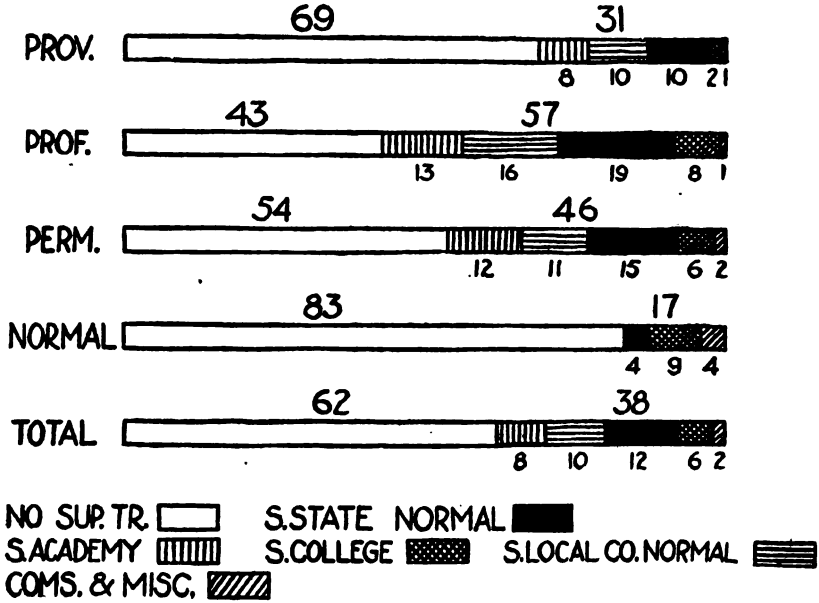

DIAGRAM 2.—Percentage of teachers in one-teacher schools on the basis of their supplementary academic and professional training during service.

schools offering both academic and professional training is one of the most pressing educational questions before the State at the present time. The 13 counties in which the State normal schools are located have a very great educational advantage in providing facilities for training teachers as opposed to the 53 counties not having such schools in their midst. Whether the additional training for rural teachers in Pennsylvania can best be conducted in high schools—the plan followed in the State of Minnesota [14]—or in county training schools, of which Wisconsin has furnished us a notable example,[15] it is not within the scope of this monograph to suggest. But all will agree that it shows unmistakably that something must be done in the remainder of these 53 counties not possessing State normal schools to increase the supply of academically and professionally trained teachers to meet the great demand for teachers to fill the schools under county superintendents' supervision and especially the one-teacher schools in the open country.

[14] Foght. The Rural School System of Minnesota, U. S. Bu. of Educ., Bul., 1915, No. 20, p. 43.
[15] Laws of Wisconsin Relating to County Training Schools, sec. 411.

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Chapter V.

CERTIFICATION.

There are seven different kinds of teachers' certificates issued in Pennsylvania—provisional and professional, valid only in a county or district, and permanent State certificates, normal-school certificates, normal-school diplomas, provisional college certificates, and permanent college certificates, valid throughout the State. The four kinds of certificates commonly held by rural teachers may be described as follows:[1]

TABLE 31.—*Principal features of teachers' certificates in Pennsylvania.*

NAME OF CERTIFICATE.	ISSUED BY—	VALID IN—		DURATION.	PERSISTENCE
Provisional.....	County or district superintendent.	County or district (nonindorsable).	Branches named.	One year.....	May not teach more than 5 school terms on certificate.
Professional.....	County or district superintendent.	County or district (indorsable by other county or district superintendents in districts of 2d or 3d class).	...do.....	Three years...	Not renewable more than 3 times; renewable on examination in 2 of the elective branches for a professional certificate not before offered by the applicant.
Permanent.....	State superintendent of pubic instruction.	State.....	...do.....	Life.....	
State normal-school certificates.	State normal school.	.....do.....	...do.....	Two annual school terms.	
State normal-school diploma.	State normal school.	.....do.....	...do.....	Life or term of years.	

There is, in addition, one other type of certificate held by a small proportion of teachers in elementary schools under the supervision of county superintendents—the county permanent certificate, discontinued through the adoption of the new Pennsylvania School Code in 1911. Since the number of teachers holding these certificates is small and since the certificates are valid for life, they will be included with the permanent State certificates.

Inasmuch as the number of teachers holding the college provisional and permanent certificates in the elementary schools in townships and boroughs under county supervision is so small as to be practically negligible, it is also deemed advisable not to consider these types of certificates. Thus it will be the purpose in this study to see the working out in actual practice of the provisional, professional, and permanent certificates, based practically on examination, and State normal-school certificates and diplomas issued as a result of attendance in a State normal school.

[1] Pennsylvania School Laws, and appendix, 1919, Art. XIII, secs. 1301-1324. Updegraff, Harlan. Teachers' Certificates Issued under General State Laws and Regulations, U. S. Bu. of Educ. Bul., 1911, No. 18, p. 96.

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CERTIFICATES HELD BY TEACHERS IN ONE-TEACHER SCHOOLS.

The number and proportion of the different types of certificates held by teachers in township districts of 28 counties of the State in the current year 1919–20 will be found in Tables 32 and 33, which represent 5,131 teachers, of whom 4,217 are in one-teacher schools, and the remainder, 914, in schools of two and more than two teachers. These statistics include all the teachers in townships listed on the official directories issued by the counties in the fall of 1919. The county superintendents indicated on these directories the kind of school taught and the certificate held by each teacher working under their supervision.

TABLE 32.—*Number of teachers in elementary one-teacher schools, and two and more than two-teacher schools, according to kind of certificates held, in 28 counties of the State.*

No. of county.	Division A.—One-teacher schools. Certificates.						Division B.—Schools of two and more than two-teacher schools. Certificates.					
	Provisional.	Professional.	Permanent.	Normal.	College.	Total.	Provisional	Professional.	Permanent.	Normal.	College.	Total.
1	142	41	26	9	2	219	21	14	4	7	.....	46
2	75	41	16	11	.....	143	3	1	3	4	.....	11
3	126	79	4	2	.....	211	8	16	2	3	.....	29
4	73	41	9	2	3	128	34	43	9	15	1	102
5	72	60	10	48	.....	190	7	14	4	14	.....	39
6	73	44	11	45	1	175	11	13	2	40	1	67
7	113	40	9	56	.....	218	13	8	4	13	.....	38
8	131	39	8	1	.....	179	52	22	12	6	.....	92
9	13	24	22	1	.....	60	1	.....	.....	1	.....	2
10	26	12	4	5	1	48	1	6	.....	5	.....	12
11	41	4	20	147	4	216	1	.....	9	14	.....	24
12	26	13	1	9	2	51	.....	.....	.....	.....	.....	.....
13	55	21	22	51	.....	149	3	4	1	7	.....	15
14	72	32	11	8	.....	123	8	1	.....	3	.....	12
15	93	54	12	2	.....	161	5	5	4	3	.....	17
16	35	16	8	10	.....	69	2	1	.....	1	.....	4
17	183	64	45	67	.....	359	18	14	14	14	.....	60
18	31	18	2	3	.....	54	3	3	1	1	.....	8
19	53	26	13	15	.....	107	.....	.....	.....	.....	.....	.....
20	62	25	19	16	.....	122	3	2	.....	5	1	11
21	60	22	10	9	.....	101	5	.....	7	2	.....	14
22	62	42	10	29	.....	143	14	15	3	13	.....	15
23	169	60	8	4	.....	241	26	20	1	4	1	52
24	24	13	6	3	1	47	6	13	5	1	.....	24
25	71	20	26	1	.....	118	4	.....	8	.....	.....	12
26	57	35	7	8	.....	107	10	18	12	39	1	80
27	72	39	11	18	.....	140	13	10	4	10	.....	37
28	176	56	80	26	.....	338	22	14	20	5	.....	61
Total	2,186	981	429	606	14	4,217	293	257	129	230	5	914
Range	13–183	4–79	1–80	1–147	.....	47–359	0–52	0–43	0–20	0–40	.....	0–102
First quartile	41	20	8	3	.....	101	3	1	1	2	.....	12
Median	71	35	10	9	.....	140	7	8	4	5	.....	24
Third quartile	93	42	19	26	.....	190	13	14	7	13	.....	46
Quartile deviation	26	11	6	12	.....	45	5	7	3	6	.....	12

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TABLE 33.—*Percentage of teachers in elementary one-teacher schools, and two and more than two-teacher schools, according to kind of certificates held, in 28 counties of the State.*

No. of county.	Division A.—One-teacher schools.				Division B.—Two and more than two-teacher schools.			
	Certificates.				Certificates.			
	Provisional.	Professional.	Permanent.	Normal.	Provisional.	Professional.	Permanent.	Normal.
1[1]	65	19	11.0	4.0	45	31	9	15
2	52	29	11.0	8.0	27	9.1	27	36
3	60	37	2.0	.9	27	55	7	10
4[1]	57	32	7.0	1.5	34	42	8	15
5	38	31	5.2	25.0	18	36	10	36
6[1]	42	25	6.0	26.0	16	20	3	60
7	52	18	4.1	25.6	34	21	10	34
8	73	22	4.4	.5	56	24	14	6
9	22	40	36.0	1.6	50	.....	.....	50
10[1]	54	25	9.0	10.4	8	50	.....	42
11[1]	19	2	9.2	68.0	4	.....	38	58
12[1]	51	25	1.9	18.0	.....	.....	.....	.....
13	37	14	15.9	34.2	20	26	6.6	47
14	58	26	9.0	7.0	66	8	.....	25
15	58	33	7.4	1.2	29	29	24	18
16	51	23	11.0	15.0	50	25	.....	25
17	51	18	13.0	18.0	30	23	23	23
18	57	33	3.7	5.5	38	38	12	12
19	50	24	12.0	14.0	.....	.....	.....	.....
20	51	20	16.0	13.0	27	18	.....	45
21	60	22	10.0	8.9	35	.....	50	14
22	43	30	7.0	20.0	31	33	7	29
23	70	25	3.3	1.6	50	39	2	7.6
24[1]	51	28	13.0	6.3	21	54	20	4.1
25	60	17	22.0	.9	33	.....	67	.....
26	53	33	6.5	7.4	13	23	15	49
27	51	28	8.0	13.0	35	27	11	27
28	52	16	24.0	7.6	36	23	33	8
Total per cent..	52	24	10.0	14.0	32	29	14	25
Range	19–73	2–40	1.9–36	0.5–68	4–66	0–55	0–67	0–60
First quartile	50	19	5	1.6	20	18	2	10
Median	52	25	9	8	30	25	10	25
Third quartile	57	30	12	18	36	36	20	36
Quartile deviation...	5.3	5.5	3.5	8.2	8	9	9	8

[1] College certificate teachers in Table 32 not included.

From these tables it will be observed that 2,186 of the 4,217 teachers in the one-teacher schools hold provisional certificates; in other words, 52 per cent hold the lowest possible type of certificate in order to qualify as a teacher in the public schools of Pennsylvania. The number holding the professional or second kind of certificate is 981, or 24 per cent of the total number. Thus, 3,167, or 76 per cent of the entire number, hold certificates obtained through examinations given exclusively by county superintendents, while 24 per cent hold permanent State certificates and normal school certificates or diplomas. But only 606, or 14 per cent of the entire group, hold normal school certificates and diplomas. If, however, county 11, which has an unusually large number of normal school graduates, were eliminated, the remaining 27 counties would have but 459 out of 4,001, or 11.5 per cent normal school graduates in their one-teacher rural schools.

Assuming that the proportion of normal school graduates in these counties is typical of the State as a whole, it will be seen that on the basis of 14 per cent for the 28 counties there would be approximately 1,400 normal school graduates among the 10,000 teachers in one-teacher schools throughout the whole State. However, if the average for the 27 counties, 11.5 per cent, is taken as a basis, there would be approximately 1,150 normal school graduates teaching in these counties. Since, according to the annual report of the State superintendent of public instruction for 1918, there were 7,404 normal school graduates teaching in the 23,800 schools under county supervi-

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sion,[2] there are approximately 6,000 normal school graduates teaching in the 13,800 county schools other than one-teacher schools.

When one considers that the number of one-teacher rural schools constitutes nearly one-half of the entire number of teachers under county supervision, a striking contrast

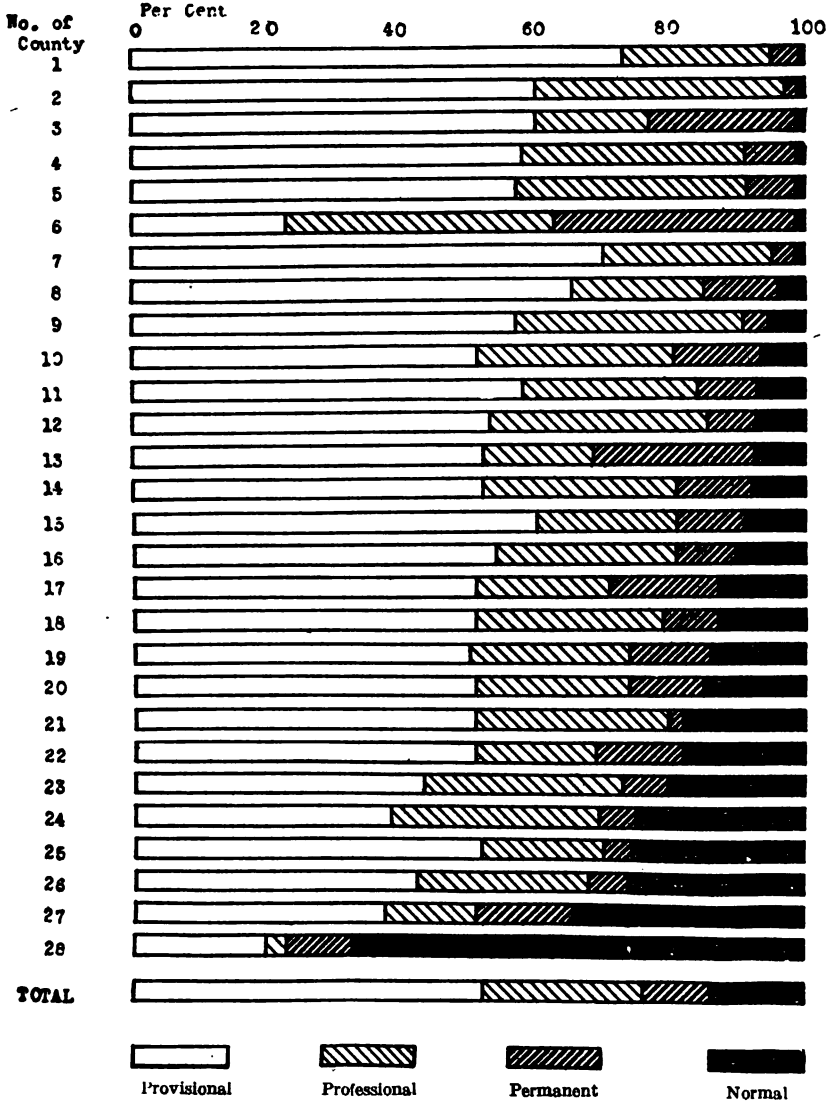

DIAGRAM 3.—Percentage of teachers holding different kinds of certificates in elementary one-teacher rural schools in 28 counties of the State.

is found between this one-teacher group, with only 14 per cent normal school graduates, and the two and more than two teacher group, with approximately 44 per cent of the teachers with normal school training. This demonstrates a most inequitable distribution of normal school trained teachers among the schools under county super-

[2] Rep. State Supt. Pub. Instruction, 1918, pp. 610-11.

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vision. It would seem that if a more equitable distribution of trained teachers were established throughout the counties, greater impetus would be given toward solving the problem of raising the standard of the one-teacher rural schools in the State.

Again, it is equally striking that 52 per cent of the teachers in one-teacher schools in the 28 counties considered hold provisional certificates, which when interpreted for the entire State means that approximately 5,200 teachers in the one-teacher rural schools hold this certificate. In the report above referred to, issued by the State department of public instruction, it will be found that 7,033 teachers out of the 23,800 under county supervision held provisional certificates in 1918. Consequently the remaining 1,800 certificates must be held by approximately 13 per cent of the 13,800 teachers in schools other than one-teacher school under county supervision. This second comparison of the percentage holding provisional certificates between the two groups of teachers emphasizes just as strongly as in the case of the normal school graduates the very unfortunate inequitable distribution of teachers holding different types of certificates.

CERTIFICATES HELD BY TEACHERS IN SCHOOLS OF TWO AND MORE THAN TWO TEACHERS.

It may be seen at a glance, in Division B of Tables 32 and 33, from the number and kinds of certificates, that a larger proportion of the teachers in this class of schools are better trained than those in the one-teacher schools. For example, 293 out of the 914 teachers hold provisional certificates, which is only 32 per cent of the whole number, as compared with 52 per cent in the one-teacher schools. On the other hand, 25 per cent hold normal-school certificates and diplomas as compared with 14 per cent in the one-teacher group. The number of teachers holding professional and permanent certificates is also proportionately higher than in the one-teacher schools, although the difference is not so marked. The main fact in all of this is that the percentage of teachers holding higher certificates, thus indicating better preparation and training, is appreciably higher among the teachers in schools of two and more than two teachers than in the case of the teachers in the one-teacher schools in the same counties.

CERTIFICATES HELD BY TEACHERS IN BOROUGH ELEMENTARY SCHOOLS.

Since the writer had the information giving the kind of certificates held by the teachers in the borough elementary schools under supervision of the county superintendents in the same counties, it was found interesting to see how the certification of these teachers compares with that in the township schools previously discussed. The number of teachers holding professional and permanent certificates is practically the same as in the case of the one-teacher schools and of the schools of two and more than two teachers in townships, namely, 21 per cent professional and 15 per cent permanent. It was also found, as might be expected, that the per cent of normal school graduates teaching in boroughs is 58 per cent, or 44 per cent higher than that in the one-teacher schools, while conversely the per cent of provisional certificate teachers in the boroughs is only 6 per cent, or 46 per cent lower than that in the one-teacher schools.

These facts emphasize all the more strongly the unequal distribution of kinds of certificates among county teachers, implying unequal academic and professional preparation in the different types of schools under county supervision. They help to substantiate the evidence found elsewhere in this study that teachers with the higher grades of certificates either migrate voluntarily to the village schools of two and more than two teachers and the borough schools, or are frequently transferred arbitrarily by school boards to the first type of schools just named in the same townships. These vacancies thus caused in the one-teacher schools are, as the facts indicate,

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usually filled by teachers holding provisional certificates. The fact is already established that the ungraded one-teacher rural school is usually taught by one with inadequate academic preparation and practically no professional training or teaching experience.

In Chapter II were presented the facts relating to the limiting conditions affecting the work of the rural teachers in one-teacher schools. Clearly they were of the most disadvantageous type. Naturally teachers avoid these schools if possible, and those in charge apparently are not willing to pay more to secure teachers for these more difficult positions. Hence our rural schools are being filled with the least competent among the entire teaching force.

ANALYSIS OF THE PRACTICE OF CERTIFICATION BY COUNTIES.

Turning now to the individual counties, it will be observed in Table 32, Division A, that the variation is most pronounced both among the kinds of certificates held by

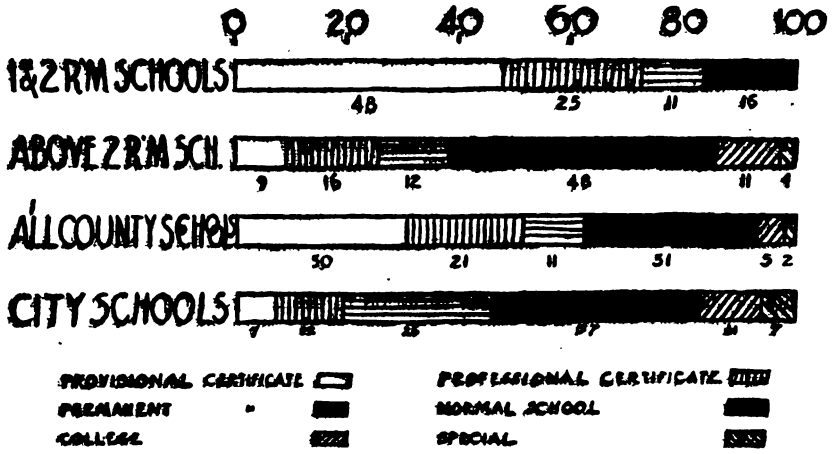

DIAGRAM 4.—Percentage of teachers holding various kinds of certificates in different types of schools in Pennsylvania.

the teachers of the same county and also among the separate counties. For example, in counties 1, 7, and 11 there are practically the same number of one-teacher schools, averaging 218 under county supervision. However, county 1 has 142 teachers holding provisional certificates, county 7 has 113, and county 11 has 41. At the same time county 1 has 9 normal-school graduates, county 7 has 56, and county 11 has 147. In the case of the professional certificates, county 11 has only 4 teachers holding this class of certificate, while counties 1 and 7 have 41 and 40, respectively.

Another very interesting comparison can be made among counties 6, 8, and 15, having approximately 170 one-teacher schools in the open country. County 6 has 45 teachers holding normal-school certificates or diplomas, while counties 8 and 15 show the astonishing record of having only 1 and 2 normal-school graduates respectively. In contrast with these figures, county 6 has 73 teachers with provisional certificates, while counties 8 and 15 with practically no normal school trained teachers, as was just pointed out, have 131 and 93 provisional certificate teachers, respectively.

Counties 17 and 28 each with over 300 one-teacher schools—the largest number of one-teacher schools among all the counties in the State—do not differ greatly in the number of teachers holding provisional and professional certificates. However, in the case of the normal-school certificates and diplomas, the former county has 67, while the latter has only 26, meaning that the first county has approximately three times as

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many normal-school trained teachers as the second. The number of permanent certificates held by the teachers in these two counties also varies considerably, in that county 28, with 80, has nearly twice as many as county 17, with 45. Table 33 also gives the percentages of each kind of certificates by counties. In examining the fourth column of Division A, which gives the per cent of teachers holding normal-school certificates and diplomas in one-teacher schools, it can be seen that the range in per cent extends from 0.5 to 68 per cent, or expressed in numbers (Table 32) the range would be from 1 normal school graduate in one county to 147 in another county. However, the percentage of teachers holding normal-school certificates and diplomas in the 14 counties representing the middle 50 per cent of the group range from 1.6 to 18, with a quartile deviation of 8.2 per cent, indicative of a wide variation of per cent in the total distribution. These figures are really quite alarming when it is considered that 7 of these 28 counties have less than 2 per cent normal-school graduates teaching in the one-teacher rural schools.

In the case of the provisional certificates, the per cents range from 19 to 73; the middle 50 per cent of the counties extend from 50 to 57 per cent, indicating a quartile deviation of 5.3 per cent, an unusually close grouping about the median, 52 per cent, thus showing less variation in the total distribution than that representing normal-school certificates and diplomas.

There are also differences apparent in the separate counties in regard to the professional and permanent certificates; the former having a range from 1 to 40 per cent, and the latter from 1.9 to 36 per cent. The permanent certificates have the shortest range and the lowest variation in per cents among the four classes of certificates in the various counties.

The group of 26 counties for which we have data on the type of certificates held by the teachers in the schools of two and more than two teachers, according to Division B of Table 33, shows practically as great variation in the different types of certificates among the different counties as that in the case of the one-teacher schools. While the percentage of teachers holding normal school certificates and diplomas, as we have mentioned before in this discussion is 25, or 11 per cent higher than that in the one-teacher school group, yet the range is nearly the same, extending from 0 to 60 per cent. One-half of the difference between the per cent at the first quartile point and that at the third quartile point is 8 per cent, indicating practically the same kind of distribution as in the case of the normal certificates and diplomas in the one-teacher schools, although maintaining the higher level, as expressed in the median and quartile points, at all points on the scale. The median per cent in the case of the provisional certificates is 30, a decrease of 22 points from the median per cent of provisional certificates in the one-teacher schools; and the quartile deviation, which is 8 per cent, also shows a much greater variation in the different counties.

These unusually wide variations in number and per cent of the four kinds of certificates held by the teachers in one-teacher schools of 28 counties of the State this current school year, 1919–20, might be attributed to a number of varying causes. Naturally one of the first questions that might be asked is, which of these counties has one of the 13 State normal schools located within its boundaries or in an adjoining county? County 11 has 68 per cent of its teaching force in the one-teacher schools, normal school graduates, and at the same time has one of the largest normal schools in the State. County 13, with the second highest per cent of normal school graduates, namely, 34.2 is also a normal school county. On the other hand, county 17 has a normal school in its midst, but only 18 per cent of the teachers in one-teacher schools are normal school graduates. While there can not be any question that a normal school located in a particular county makes for a larger number of normal school graduates available for the schools of that county, if for no other reason than the fact that practically every normal school in the State shows by its catalogue that the largest number of students from any one county are residents of the home county, yet the third county

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above referred to would certainly give us adequate reason to believe that simply the normal school's location in the county is not the exclusively controlling factor to which should be attributed the high percentage of normal school graduates teaching in a normal school county.

Four of the counties listed in Tables 32 and 33 adjoining normal school counties are 6, 14, 18, and 28, in which there are 26, 7, 5.5, and 7.6 per cent of normal school graduates teaching in the one-teacher schools, a variation which makes it difficult to determine just how far the proximity of a normal school in an adjoining county is a constant factor. On the other hand, counties 5, 7, and 22 do not have a normal school within their boundaries and are not in close proximity to counties having normal schools, but they have the high percentages of 25, 25.6, and 20 per cent normal school graduates in the one-teacher schools, respectively. It is evident that these three counties, at least, are typical of a class on which other influences apart from the location of a State normal school are important factors.

It was found that the counties having the largest number of normal school graduates as a rule have a large proportion of school districts with eight and nine months' school terms, with commensurately higher salaries, caused by the longer term. It would seem that, at least in some counties, the length of school term is another factor in explaining the higher percentage of normal school certificates and diplomas. On the other hand, as will be shown in the chapter on salaries, the very marked tendency on the part of many school districts in some of the counties for paying the lowest minimum salary required by law has a tremendous bearing in accounting for the kind of certificate held by the teachers in such districts. Many school boards hire the teacher with the lowest type of certificate, requiring thereby the lowest minimum salary, in order to keep the teachers' salaries for their particular district as low as possible.

While conditions as previously stated are unquestionably responsible in part for the tremendous variations in number and kinds of certificates frequently found between adjoining counties, nevertheless there is undoubtedly another very important factor, extremely difficult to measure, namely, the influence of the educational leadership in the different counties. While we have no direct evidence to substantiate this point of view, yet by weighing the facts already set forth we believe that we are reasonably safe in saying that the leadership in some of the counties has a tremendous bearing in maintaining high educational standards in regard to certificates, particularly in those counties where educational leadership wields a potent influence with members of the school boards of the different school districts.

CERTIFICATES OVER A THREE-YEAR PERIOD.

Since the data thus far presented on certificates give us information concerning the number and kinds of certificates held by the teachers for the current school year 1919–20, it might be well to see how the certificate situation varies over a period of years. In the accompanying Table 34 will be found the number and kinds of certificates held by the teachers in the one-teacher schools as indicated by the county superintendents in their teachers' directories in five typical counties from different parts of the State for the school years 1917–18, 1918–19, and 1919–20, respectively. At a glance it will be seen that there is a marked variation in some of these counties over the three-year period, especially in the case of the provisional certificates and of the normal school certificates and diplomas. This is probably of all the more interest since during the year 1917 and part of 1918 we were in the World War, causing certain social and economic conditions which in education resulted in a tremendous scarcity of teachers throughout the whole country. Its effect in 1919 would probably be felt all the stronger in the one-teacher schools in the rural districts, in view of the facts and conditions revealed throughout this study.

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TABLE 34.—*Distribution of certificates over a period of three years, 1917, 1918, and 1919, in one-teacher schools in five typical counties.*

Counties.	Provisional, in year—			Professional, in year—			Permanent, in year—			Normal certificate and diploma, in year—			Total, in year—		
	1917	1918	1919	1917	1918	1919	1917	1918	1919	1917	1918	1919	1917	1918	1919
No. of county:															
1	87	92	66	71	56	58	8	12	10	49	30	42	215	190	176
2	47	61	73	46	47	44	14	12	11	65	53	45	172	173	173
3	44	50	55	24	22	21	21	22	22	60	55	51	149	149	149
4	149	176	183	74	64	64	48	47	45	95	75	67	366	362	359
5	56	62	59	23	25	25	16	19	19	20	16	17	125	122	120

While differences in the three years are scarcely pronounced enough to support marked conclusions, the several noticeable tendencies should probably be given consideration. In the first place the number of provisional certificates is larger in 1919 than in 1917 in four of the five counties, as shown in the table. It will be readily observed that in county 1 the number of provisional certificates is less in 1919 than in 1917, but by observing the totals at the end of the table it will also be seen that this county has 39 less one-teacher schools in 1919 than in 1917—incidentally the only county in the group that shows a marked falling off of the one-teacher schools over this period of three years—indicating that the proportion of provisional certificates in this county is also practically the same.

In the case of the professional certificates the number in each one of the five counties is less in 1919 than in the previous years. The number of permanent certificates in counties 1, 3, and 5 shows a slight increase in the third year over the first. The most striking information furnished through the statistics is found in the group of teachers holding normal school certificates and diplomas, where in each of the five counties the number is less in 1919 than in 1917. This difference ranges from 3 in county 5 to 28 in county 4, which fact is all the more surprising since the latter county is the one county among the group that has a normal school located within its boundaries.

TEACHERS' CERTIFICATES IN RELATION TO EXPERIENCE.

It will be recalled that one of the main requisites for teachers to qualify for a certificate in Pennsylvania higher than the provisional or first grade certificate is the number of years of experience. In order to see how this works out in practice, the data which the teachers gave through the questionnaires concerning their experience and the type of certificates are arranged in Table 35. The median years of experience for the four kinds of certificates as listed in the above-mentioned table range from 0.9, in the case of the teachers holding provisional certificates, to 15.9, in the case of those holding permanent certificates. Teachers with professional certificates and normal school certificates or diplomas reported practically the same amount of experience, namely, 4.9, and 4.5, respectively.

The very low experience of the teachers holding provisional certificates can readily be explained from the fact that 294 out of the 685 teachers reporting were new teachers without any previous experience. It is also of interest to note that approximately 85 per cent of the group with provisional certificates had less than 2 years' teaching experience. The five-year limit that the new school code has placed on this certificate for possible yearly renewal by examination would automatically tend to keep down the years of experience.[3]

[3] Pa. Sch. Laws, and app., 1919, Art. XIII, sec. 1302.

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TABLE 35.—*Distribution of certificates on basis of years of experience.*

Certificates.	Years of experience.																		Total.	Per cent.	Median years of experience.
	0	1	2	3	4	5	6	7	8	9	10–14	15–19	20–24	25–29	30–34	35–39	40–49	50 or over.			
Provisional	204	86	181	68	28	6	8	1	3	...	6	2	...	...	2	...	...	...	685	47	0.9
Professional	...	...	21	36	53	41	48	27	14	14	41	11	3	1	3	...	2	...	315	22	4.9
Permanent	...	...	...	...	7	8	9	8	6	9	48	29	16	14	18	11	5	6	194	13	15.9
Normal certificate or diploma	50	29	25	10	24	7	13	7	8	9	26	20	15	3	4	4	...	...	254	18	4.5
Total	244	115	227	114	112	62	78	43	31	32	121	62	34	18	27	15	7	6	1,448	100	3.3

Since the school laws of Pennsylvania require teachers to have 2 years of successful experience before they can qualify for the professional certificate, the years of experience in this group must necessarily be considerably higher than for those holding provisional certificates. Furthermore, a professional certificate can be renewed three times for a period of three years each.[4] It would seem that under these circumstances the median years, 4.9, for the group holding professional certificates is low, meaning that 50 per cent out of the 315 teachers reporting have had an experience anywhere from 2 years to approximately 5 years. Again, over 70 per cent of the group had 7 or fewer years of experience. These facts would indicate that the 12 years' limitation placed upon the certificate would seem to cause many of these teachers to qualify for the permanent certificate and normal-school certificate or diploma.

The group of teachers holding normal-school diplomas or certificates shows by far the widest distribution of years of experience. The middle 50 per cent of the teachers reported teaching experience extending from 1.5 to 12.6 years, indicating that the upper 25 per cent range in experience approximately from 12.6 to 40 years. Since the average teaching life of a normal-school graduate from the Pennsylvania State normal schools is estimated at 3½ years,[5] it is safe to conclude that the experience of the teachers holding normal-school certificates or diplomas in the one-teacher schools is probably high in comparison with the group of teachers in all types of schools holding normal-school diplomas. In spite of the fact that there is a general tendency for normal-school graduates to try to secure teaching positions in urban communities just as soon as possible after having had a year or two of experience in the rural schools, the bimodel distribution of the teachers holding normal-school diplomas, indicated by 54 per cent having 4 years or less experience and 30 per cent having 10 or more years of experience, would help to bear out the conclusion that normal-school graduates either remain in the one-teacher rural schools for a very limited number of years or continue for an indefinite length of time in this type of school.

CERTIFICATES AND AGE OF TEACHERS.

In the light of the previous discussion concerning the experience of teachers, it might be expected that a somewhat similar relationship exists between the ages of teachers and the kinds of certificates held by this same group of teachers. In Table 36 the median ages range from 20.3 for the teachers holding provisional certificates to 37.3 for those holding a permanent certificate. It will be noticed, too, that in the group holding permanent certificates, 50 per cent of the 194 teachers reporting range from 37 to 60 years or more in age. These facts are especially significant when one considers the very limited amount of academic preparation and professional training that this group of teachers possess.

[4] Pa. Sch. Laws and App., 1919, Art. XIII, sec. 1304, 1306.
[5] Philips, Geo. M. An. Rept. for Normal Schools.

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TABLE 36.—*Distribution of certificates on basis of age of teachers.*

Certificate.	Ages of teachers.																Total.	Per cent.	Median ages.
	18	19	20	21	22	23	24–25	26–27	28–29	30–34	35–39	40–44	45–49	50–54	55–59	60 or over.			
Provisional	149	154	128	97	49	30	30	14	8	22	3	5	4				683	47	20.3
Professional			22	29	31	48	64	30	27	23	24	7	1	4	1	2	313	22	24.8
Permanent					3	9	10	11	13	41	22	20	26	12	16	11	194	13	37.3
Normal certificate or diploma	5	26	37	31	18	12	25	16	12	19	13	15	15	6	4	1	255	18	23.9
Total	154	180	187	147	101	99	129	71	60	105	62	47	46	22	21	14	1,445	100	23.0

ACADEMIC PREPARATION AND PROFESSIONAL TRAINING AS RELATED TO CERTIFICATION.

In Table 37 the number and per cent of teachers having had secondary education are distributed according to the kind of certificates held by the teachers respectively. It will be seen in Division B that the 61 per cent of the teachers reporting as having had secondary education are distributed as follows: Seven per cent, less than 1 year; 4 per cent, 1 year; 11 per cent, 2 years; 17 per cent, 3 years; and 22 per cent completing a four-year high-school course. As their education was considered at length in the preceding chapter, it is the purpose in this discussion to analyze the secondary education as reported by the teachers on the basis of the kinds of certificates held.

TABLE 37.—*Distribution of teachers by certificates on basis of their secondary education.*

DIVISION A.—DISTRIBUTION BY YEARS.

Certificate.	Teachers reporting.	Without secondary education.	With secondary education.	Years of secondary education.				
				Less than one year.	One year.	Two years.	Three years.	Four years.
Provisional	678	187	491	43	17	74	139	218
Professional	308	121	187	28	12	41	48	58
Permanent	190	114	76	23	15	10	17	11
Normal certificate or diploma	264	144	120	4	13	32	43	28
Total	1,440	566	874	98	57	157	247	315

DIVISION B.—DISTRIBUTION IN PER CENTS.

Certificate.	Per cent of teachers reporting.	Per cent without secondary education.	Per cent with secondary education.	Secondary education in per cents.				
				Less than one year.	One year.	Two years.	Three years.	Four years.
Provisional	45	28	72	6	3	11	20	32
Professional	25	40	60	9	4	13	15	19
Permanent	12	60	40	12	8	5	9	6
Normal certificate or diploma	18	55	45	2	5	12	16	10
Total per cent.	100	39	61	7	4	11	17	22

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Among those reporting four years of secondary education, the largest group, or 32 per cent, hold provisional certificates; the second largest group, or 19 per cent, professional certificates; and the smallest group, or 6 per cent, are teachers under permanent certificates. In the case of the teachers having had three years of secondary education, the largest proportion, or 20 per cent, are again found among the provisional-certificate class, while the second largest proportion hold normal-school certificates or diplomas. An interesting fact, however, is that the largest per cent of teachers reporting one year or less, respectively, hold permanent certificates.

In considering these teachers further from the viewpoint of the different types of certificates held and of the proportion without secondary education, it is a rather striking fact that the largest group is found to be those holding permanent certificates, the second largest those with normal-school certificates or diplomas, and the smallest those holding provisional certificates. Of course, it will be maintained that these conclusions should naturally be expected, since teachers holding permanent certificates and normal-school diplomas and certificates are, as a rule, older and have had longer experience, but probably have not had the same opportunity to attend high schools as have the teachers holding provisional certificates and possibly those holding professional certificates, but having fewer years of experience. As a matter of fact, according to the classification of certificates as defined by the State law, the emphasis is placed predominantly upon experience as a requirement for those who wish to obtain the professional and permanent certificates; and thus on account of an examination system of certification not requiring as a prerequisite any definite amount of academic or professional training in a secondary school, normal school, or college, frequently only slight consideration is given to such training. From the data presented it appears that a tremendous argument would be set forth for an immediate revision of the . . . examination route . . . certificate system, since approximately 75 per cent of the 10,038 teachers in one-teacher schools hold certificates issued by 66 different county superintendents with the same possible number of county standards, in favor of one that will give greater credit for actual academic and professional education obtained in accredited schools.

CERTIFICATES OF TEACHERS FROM STANDPOINT OF SUPPLEMENTARY TRAINING DURING SERVICE.

Since the facts presented in the preceding chapter on the educational preparation of these teachers showed that only 5 per cent of the teachers holding provisional, professional, and permanent certificates had attended a normal school in preparation for teaching, apart from those who graduated from one of the Pennsylvania State normal schools, it was found that this small group was fairly equally distributed among those holding the three types of certificates above named. Consequently we shall restrict ourselves in this discussion to the supplementary academic and professional training of rural teachers received during service. By studying the data as shown in Tables 38 and 39, it is evident that only 38 per cent of the number of teachers reporting had received supplementary training during service. These are distributed as follows: Eight per cent in summer academies, 10 per cent in summer local or county normal schools, 12 per cent in summer State normal schools, 6 per cent in summer college courses for teachers, and 2 per cent by correspondence courses and miscellaneous ways.

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TABLE 38.—*Distribution of teachers in one-teacher schools, by certificate, on the basis of their supplementary academic and professional training during service.*

Certificate held.	Number reporting.	Receiving no training during service.	Receiving training during service.	Summer academy—					Summer local or county normal school—					Summer State normal school—					Summer college—				Correspondence and miscellaneous.
				Weeks.				Total.	Weeks.				Total.	Weeks.				Total.	Weeks.			Total.	
				6	12	18	24		6	12	18	24		6	12	18	24		6	12	18		
Teachers holding—																							
Provisional certificate	413	283	130	20	15	4	5	44	18	9	2	4	33	28	9	1	2	40	8	2	....	10	3
Professional certificate	258	109	144	13	12	9	6	40	17	11	1	5	34	25	12	7	4	48	14	5	....	19	3
Permanent certificate	220	118	102	8	10	5	2	25	13	9	2	2	26	9	4	9	11	33	9	3	1	13	5
Normal certificate or diploma	199	166	33	....	....	....	....	....	....	....	....	....	....	2	3	1	2	8	13	2	3	18	7
Total	1,085	676	409	41	37	18	13	109	48	29	5	11	93	64	28	18	19	129	44	12	4	60	18
Per cent	100	62	38	....	....	....	....	10	....	....	....	....	8	....	....	....	....	12	....	....	....	6	2

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The two factors determining the supplementary training of teachers, as pointed out in the preceding chapter on education, are again present. The second factor, namely, the accessibility of schools, is probably more clearly shown in the previous chapter in the column for the typical counties following the total distribution (Table 29); but the first factor, the kind of certificate held by the teacher, stands out more clearly in Tables 38 and 39, where the training in service can be analyzed for each group of teachers holding the different types of certificates.

TABLE 39.—*Distribution of teachers in one-teacher schools on the basis of teaching experience—Total distribution for 18 counties, followed by 8 typical counties.*

Years of experience.	Total distribution in 18 counties.		Counties.							
	Number.	Per cent.	1	2	3	4	5	6	7	8
0	334	24	16	12	14	10	20	11	13	20
1	120	8	3	2	6	5	5	5	4	7
2	199	14	7	6	12	9	3	15	11	22
3	104	7	1	4	7	3	5	5	7	6
4	112	8	5	1	11	.....	8	11	6	3
5	72	5	2	2	7	1	5	3	1	5
6	78	6	1	.....	10	.....	5	2	4	8
7	46	3	.....	3	2	.....	1	3	3	3
8	31	2	2	.....	4	.....	1	1	.....	4
9	35	2	3	.....	2	.....	1	1	1	6
10-11	52	4	.....	5	15	1	1	5	1	8
12-14	74	5	3	1	10	3	8	8	2	9
15-19	62	4	2	3	5	.....	3	8	1	6
20-24	34	2	1	.....	1	1	4	2	.....	3
25-29	30	2	1	.....	1	.....	3	.....	.....	1
30-34	27	2	3	1	2	.....	3	2	.....	1
35-39	18	1	.....	.....	1	1	1	.....	.....	.....
40-49	12	1	.....	.....	1	.....	.....	.....	.....	2
50 or over	5	.....	.....	1	.....	.....	.....	2	.....	.....
Total	1,445	100	50	41	111	34	76	84	54	114
Median years of experience	3.7	.....	2.9	3.2	5.9	2.2	4.6	4.5	2.9	4.6

The teachers holding normal-school certificates or diplomas have had little training during service, and those among this group who thus reported usually attended a summer college course or obtained additional training in a summer State normal school. In the case of the teachers holding provisional, professional, and permanent certificates, supplementary training is a most vital factor in aiding them to secure the next highest type of certificate, according to the principles followed in the Pennsylvania examination system for securing certificates. It is of interest to note that 18 per cent of these reported such supplementary training in summer academies or local county normal schools. The largest per cent of teachers holding professional certificates attended summer academies and local county normal schools, which is evidence that these teachers elected the schools which were not only most accessible, but which also best afforded them the academic preparation in the subjects listed for the particular certificate for which they were applicants. As the accessibility of schools is so clearly demonstrated in the eight typical counties in the previous chapter, it does not seem necessary to present these counties on the basis of certificates a second time. It is, however, fortunate that such conditions exist, since it probably helps to increase the number of teachers who will avail themselves of additional training in service.

It might not be out of place here to give a bit of the writer's experience in which the opportunity was afforded to interview a number of rural teachers holding provisional, professional, and permanent certificates in Pennsylvania while helping to prepare the schedule of courses of those who attended one of the summer 6-weeks' college courses in the State. In selecting their courses these teachers invariably chose such branches of study as were needed for additional subjects on certificates

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in order to qualify them for the next highest certificate. They invariably selected academic subjects—frequently a review of such studies as algebra, general history, and Latin—rather than courses either academic or professional, of more immediate use to their professional work. This was particularly unfortunate, as this college specialized in courses in rural sociology, home economics, and agricultural subjects, affording for teachers coming from rural schools an unusual opportunity to enrich their knowledge and experience in a field of work so greatly needed in rural communities.

From the data presented both in this and in the preceding chapter it seems opportune to emphasize again the great necessity for the changing of the certificate laws so that a greater premium will be put on both academic and professional training in accredited schools. But to do this, additional schools must be provided, especially in the 53 counties that do not have a State normal school to assist in training, both academically and professionally, the large number of new teachers needed each year in the rural schools.

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Chapter VI.

EXPERIENCE AND TENURE.

The number of years that teachers in the one-teacher schools remain in service in the rural districts in Pennsylvania varies greatly. In Table 39[1] it will be seen that the experience ranges all the way from the "beginners," or new teachers without any experience, to teachers claiming 55 years of teaching service. The median years of experience of the entire group of 1,445 teachers replying to the questionnaire is 3.7. This teaching service was generally performed in the rural districts, as only 90 teachers, or approximately 6.5 per cent of all the teachers constituting the study, reported having taught previously in borough or city schools. As this group comprises both men and women, it might be of interest to call the reader's attention to Tables 50 and 51 in the discussion on teachers' salaries,[2] where the median years of experience for men is 7 and for women is 3.2, thus showing that there is a tendency for men, although fewer in number, to remain in the service longer than women. It should be remembered, however, that the average years of experience are kept down because of the fact that 334 teachers, or 23 per cent, are teaching for the first year, without any previous experience. By deducting this number from the entire group, the median for the remaining teachers with previous teaching experience is 5.3 years. According to the data in the table, 319, or 22 per cent, had only 1 and 2 years of experience; 216, or 15 per cent, 3 and 4 years of experience; and 262 teachers, or 18 per cent, reported that they had taught for a period of years ranging from 5 to 10 years. The most striking fact is that 314 or, 22 per cent, reported that they had taught in rural districts for 10 or more years.

In the 8 typical counties listed in Table 39, the range of experience varies considerably, as indicated by a median of 2.2 in county 4 and 5.9 in county 3. Comparing these counties from the point of view of the prevailing type of certificates in counties 4, 1, and 7, in which the teachers average low in years of experience, the larger proportion hold provisional and professional certificates; while in county 3, in which the teachers rank high in years of experience, the larger proportion hold permanent and normal-school certificates and diplomas. In this connection it should be recalled from the previous chapter (Table 35) that teachers holding provisional certificates have 0.9 years of experience; those holding professional, 4.9; permanent, 15.9; and those having normal-school certificates and diplomas, 4.5.[3]

Experience, however, as discussed in this chapter, implies very little supervision. This can be clearly inferred from the large number of one-teacher schools in many of the counties with the supervision of only 1, 2, and possibly 3 superintendents, and again from the very little time that these superintendents can spend in the rural schools as reported by the teachers themselves in Chapter III. The median, 3.7 years for teachers with experience in one-teacher rural schools, ranks considerably higher in Pennsylvania than in certain other States for which we have data. For example, the median number of terms taught by all teachers in rural schools of Nebraska is 1.85.[4] For the entire State of Colorado in 1917 the teachers averaged 3

[1] See p. 5.
[2] See p. 73.
[3] See p. 47.
[4] Rural Teachers of Nebraska, U. S. Bu. of Ed., Bul., 1919, No. 20, p. 40.

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years of experience.[5] An analysis of reports from the State of North Dakota showed in 1916 an average length of service for rural teachers of 2 years.[6] The average teaching life of rural teachers in 1918 in South Dakota was 3.76.[7] The recent Virginia survey shows that in 1918–19, the median number of years of experience for white teachers was 1.4.[8] The average experience of the teachers in one-teacher schools in New York State in 1919 was 6.7 years, a considerably higher average than that of Pennsylvania.[9] Experience for the rural teachers for the United States as a whole is slightly over three years.[10]

STABILITY OF THE TEACHING FORCE.

Table 40 shows the number of different schools in which the teachers represented in Table 39 who have had one or more years of experience have taught. The median number of schools taught by the 1,050 teachers reporting is 3. The total distribution shows that 530, or slightly more than one-half the whole number, have taught in 3 or more schools; 234 teachers, or 22 per cent, taught in from 5 to 12 different schools; and 24, or slightly over 2 per cent, of the teachers claim that they have held positions in 12 to 20 different schools. This variation, shown for the group as a whole, is also evident in the 8 typical counties, in which the median number of schools taught ranges from 2.4 to 3.7, respectively. These facts seem to show a most perplexing situation, both for superintendents and teachers in that the tenure of such a high percentage of teachers is so uncertain.

TABLE 40.—*Distribution of teachers on basis of number of different schools taught for 18 counties, followed by 8 typical counties.*

Places taught.	Total distribution in 18 counties.		Counties.							
	Number.	Per cent.	1	2	3	4	5	6	7	8
1	230	22	6	12	19	9	7	8	10	19
2	290	28	9	14	22	27	14	10	14	24
3	153	15	3	7	23	6	14	4	7	12
4	119	12	3	4	8	7	6	3	6	12
5	83	8	6	1	4	7	6	3	1	7
6	60	6	2	.....	4	3	4	3	1	8
7	31	3	3	1	.....	2	1	.....	.....	6
8	29	3	.....	.....	5	6	1	.....	1	2
9	13	1	1	.....	1	1	2	3	.....	1
10–11	18	1	.....	1	3	1	2	.....	.....	3
12–13	12	1	1	.....	.....	1	2	.....	.....	1
14–15	5	.....	.....	.....	.....	2	1	.....	.....	1
16–17	3	.....	.....	.....	.....	.....	.....	1	.....	1
18–19	2	.....	.....	.....	.....	.....	1	.....	.....	1
20	2	.....	.....	.....	.....	.....	.....	.....	.....	1
Total	1,050	100	34	40	89	72	62	35	40	99
Median number of places	3.0	.....	3.6	2.4	3.2	3.0	3.7	3.0	2.7	3.6

The relationship between the number of years of experience and the number of different schools taught can probably be more clearly analyzed by studying the following Table 41. The instability, and in many instances uncertain tenure, can be very plainly shown by observing the group of 64 teachers with five years' teaching experience, of whom 28 have taught in 1 school, 18 in 2 schools, 24 in 3 schools, 11 in 4 schools, and 3 in 5 different schools. Among those having had 10 years' experience,

[5] The Administration and Support of the Colo. Sch. System, U. S. Bu. of Ed., Bul., 1917, No. 5, p. 74.
[6] Monahan, A. C., and Cook, K. M., Survey of Wyoming, U. S. Bu. of Ed., Bul., 1916, No. 29, p. 52.
[7] Educ. System of S. Dak. U. S. Bu. of Educ. Bul., 1918, No. 31, p. 210.
[8] Va. Pub. Sch. Survey, pp. 136 and 333.
[9] Engelhardt. The Teaching Profession in the State of New York.
[10] The Administration and Support of the Colo. Sch. System. Bu. of Educ. Bul., 1917.

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it will be seen that only 2 have taught in 1 school, 5 in 2 schools, 5 in 3, 8 in 4, 3 in 5, 2 in 6, and 1 in 7, 8, and 9 different schools.

The median number of schools taught for the entire group is 3, and the median years of experience is 7.5. This higher median is accounted for by the fact that this group does not include the large proportion of teachers without any previous experience. By drawing lines through these medians, 7.5 and 3, it will be observed that a very large majority of the cases are found in the quadrant 1 to 6 years of experience and 1 to 3 schools taught, and likewise 6 to 40 or more years of experience and 3 to 20 different schools taught, also indicating that the number of places taught by these teachers increases in direct proportion to the number of years of experience. The coefficient of correlation for the entire group was found to be very high, r=.79 P.E.=±.0078. (Pearson's Product-Moment Method.)

TABLE 41.—*Relation of number of years of experience to number of different schools taught.*

Experience.	Different schools taught.															Total.
	1	2	3	4	5	6	7	8	9	10–11	12–13	14–15	16–17	18–19	20	
1	100															100
2	82	102														184
3	31	37	25													93
4	16	50	25	8												99
5	28	18	24	11	3											64
6	8	17	18	10	8	1										62
7	8	8	11	14	6		1									48
8		9	10	12	6	1										38
9		7	6	8	7	1	1		1							31
10	2	5	5	8	3	2	1	1	1							28
11		6	5	3	5	1	1	1								22
12–14		10	10	13	13	8	8	4	1	1						68
15–17		2	9	8	10	4	6	5	2	1						47
18–20		2	4	5	5	5	4	3	2	4	1					35
21–23			1	6	6	1	1	1	2	3	1	1				23
24–26				2	1	5		5	2	5	3					23
27–29			2	4	3	1	1	3	3				2			19
30–34			1	2	7	2	2	5	5	5	3	1	1		2	36
35–39			2	4	1		3	1		1	1	1	2			16
40 or above			1	2	2			2	1	1	2	1	1	1		14
Total	275	273	159	120	66	32	29	31	20	21	11	4	6	1	2	1,050

r=.79 P.E.=±.0078.

This unusual instability of the teaching force among the rural teachers can probably be accounted for largely by the practice of many school boards in school districts in rural communities transferring teachers freely from one school to another. Several county superintendents consulted on this point said that some school boards in their counties believe that a teacher should be transferred at least at the end of two years, and that by so doing not only will the efficiency of the teacher be increased, but the school will be greatly benefited by securing the "new" teacher. Then, again, the size of the school and the difficulty in management as viewed by the directors are factors which influence the transferring of teachers. It might be pointed out that Table 43 in this same chapter shows that 37 per cent of the teachers in the one-teacher schools during this current year 1919–20, are experienced but are teaching in new positions, which data evidence all the more strongly the practices indicated throughout this discussion.

STABILITY OF TEACHING FORCE OVER A THREE-YEAR PERIOD.

The very great difficulty that superintendents experience in administering their schools from the standpoint of the instability of the teaching force is again well exemplified in Table 42. These data were obtained from the directories covering a period

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of three years, issued by the county superintendents for the school years 1917, 1918, and 1919 from six different counties, typical of all sections of the State. In tracing a one-teacher school for a period of three years it was found (Division B) that only 15 per cent of the teachers in the one-teacher schools taught the same school during this length of time. Forty-four per cent of these schools had one teacher for two years and one teacher for one year. The astonishing fact revealed by the data is that 41 per cent of the one-teacher schools in these six counties, including every school, were taught by three different teachers during this period of three years.

The second part of this table gives the information concerning the two-teacher schools of the same counties. While a similar tendency seems to exist in these schools, we are glad to know that 31 per cent of these schools have had one teacher for a period of three years, and that only 26 per cent have been taught by three different teachers.

TABLE 42.—*Number of different teachers in one-teacher schools and two-teacher schools, over a period of three years, 1917, 1918, and 1919, in six typical counties.*

DIVISION A—DISTRIBUTION BY YEARS.

No. of county.	One-teacher schools.				Two-teacher schools.			
	Three different teachers.	One teacher two years and one teacher one year.	One teacher three years.	Total.	Three different teachers.	One teacher two years and one teacher one year.	One teacher three years.	Total.
1	57	69	38	164	17	21	12	50
2	55	58	14	127	4	6	4	14
3	108	155	54	317	23	54	41	118
4	63	57	4	124	1	5	2	8
5	11	25	3	39	7	8	5	20
6	152	123	50	325	15	20	17	52
Total	446	487	163	1,096	67	114	81	262

DIVISION B—DISTRIBUTION IN PER CENTS.

No. of county.	One-teacher schools.				Two-teacher schools.			
	Three different teachers.	One teacher two years and one teacher one year.	One teacher three years.	Total.	Three different teachers.	One teacher two years and one teacher one year.	One teacher three years.	Total.
1	35	42	23	100	34	42	24	100
2	43	46	11	100	29	42	29	100
3	34	49	17	100	20	45	35	100
4	51	46	3	100	13	62	25	100
5	28	64	8	100	35	40	25	100
6	47	38	15	100	29	38	33	100
Total per cent	41	44	15	100	26	43	31	100

Considerable variation, particularly in the case of the teachers in the one-teacher schools, will be observed in comparing the six counties. For instance, in county 1, Division B, the records show that 23 per cent of the one-teacher schools had the same teacher for three years, and 35 per cent of the schools had three different teachers. On the other hand, in county 4 only 3 per cent of the one-teacher schools have had the same teacher, and 51 per cent have had three teachers; or, expressed in numbers, as shown in Division A, four of the schools out of the 124 had the same teacher over a period of three years, and 63 schools had three different teachers. It should

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be noted, however, that in county 4 a large proportion of the school districts have seven months school terms, a great many of the teachers hold provisional certificates, and the school boards as a rule pay their teachers the minimum salary. On the other hand, county 1 has a large number of school districts with eight months terms, and the teachers for the most part hold professional and permanent certificates and normal-school diplomas. County 3, with a State normal school located within its boundaries, represents what might be termed the average for the group, in that 17 per cent of the schools report one teacher for the three-year period and 34 per cent three different teachers.

If these conditions, such as were found to exist in the six counties which we have just discussed, obtain over the entire State of Pennsylvania it would mean that among the 10,038 one-teacher schools there have been during the past three years, 1917, 1918, and 1919, approximately—

4,100 schools with 3 different teachers.
4,400 schools with 1 teacher 2 years and 1 teacher 1 year.
1,500 schools with 1 teacher over the 3-year period.

10.000

These facts should help to bring forcibly before the school authorities of the State the tremendous problem of teacher tenure or instability of the teaching force that county superintendents are constantly obliged to face. This study, as previously stated, will not discuss causes and possible remedies, but it does clearly point out the fact that something must speedily be done to solve this most unfortunate condition in the rural schools.

NEW TEACHERS WITHOUT EXPERIENCE AND EXPERIENCED TEACHERS IN NEW POSITIONS.

The county superintendents of 18 counties from all sections of the State indicated in their directories of teachers for the present school year, 1919–20, those teachers, both in the one-teacher and two-teacher schools, who are new, that is, without any experience, and those in a new position although experienced. These data are tabulated in Table 43, Division A, showing that 780, or 30 per cent, of the teachers in the one-teacher schools of these 18 counties totaling 2,640 are "beginners," without any previous experience, and that 977, or 37 per cent, of the teachers in the one-teacher schools, while experienced, are teaching in a new position. This means that 67 per cent of the one-teacher schools of these counties have a different teacher this year from last.

In Division B of this same table the data are reported for the teachers in the two-teacher schools in 14 of these counties. These data are also obtained through the directories as furnished by the county superintendents. Of the 606 teachers in two-teacher schools, 71, or 12 per cent, are new teachers without any previous experience, and 197, or 33 per cent, of the 606 teachers, although experienced teachers, are in a new position. Since these two-teacher schools are located in the same counties as the one-teacher schools, it is interesting to note the marked difference between the one-teacher and two-teacher schools in regard to the percentage of new teachers without any previous experience.

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TABLE 43.—*Number and per cent of new teachers without experience and with experience in a new position in one-teacher schools and two-teacher schools in 18 counties.*

DIVISION A.—ONE-TEACHER SCHOOLS.

No. of county.	One-teacher schools.	New teachers without experience.	Teachers with experience in new position.	Per cent of new teachers without experience.	Per cent of teachers with experience in new position.
1	223	61	100	23	45
2	223	55	80	24	36
3	219	53	113	24	51
4	189	68	70	36	37
5	128	33	51	25	40
6	222	59	91	26	41
7	170	112	52	66	31
8	22	5	12	23	54
9	55	20	19	36	35
10	225	47	67	21	30
11	155	26	50	17	32
12	128	50	59	38	46
13	96	20	39	20	41
14	132	50	37	38	28
15	108	31	15	29	14
16	155	48	60	31	39
17	72	15	19	21	26
18	118	27	53	23	45
Total	2,640	780	977	30	37

DIVISION B—TWO-TEACHER SCHOOLS.

No. of county.	Two-teacher schools.	New teachers without experience.	Teachers with experience in new position.	Per cent of new teachers without experience.	Per cent of teachers with experience in new position.
1	38	5	28	13	74
2					
3	40	1	26	3	65
4					
5	60	7	18	12	30
6	60	4	21	7	35
7	110	24	40	22	36
8					
9					
10	68	6	10	9	14
11	24	1	8	4	33
12	28	1	6	4	21
13	6	2	4	33	67
14	52	8	14	15	27
15	12	3		25	
16	88	2	11	2	13
17	4	1	1	25	25
18	16	6	10	37	63
Total	666	71	197	12	33

The variation among the different counties is quite marked, as indicated in the table, since the range in per cent of new teachers without experience in the one-teacher schools extends from 17 in county 11 to 66 in county 7, and in the case of experienced teachers in a new position from 14 in county 15 to 54 per cent in county 8. In the two-teacher schools the variation in per cents is practically as pronounced, namely, 2 in county 16 to 37 in county 18 in the case of the new teachers without experience, and 13 in county 16 to 67 in county 13 of the teachers with experience in a new position. While some of these counties show some extreme per cents, the large proportion center about the average per cents for the combined group found at the foot of each column, respectively, of Table 43.

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If the percentages as found in these 18 typical counties hold true for the State as a whole, it would mean that among the 10,038 teachers in one-teacher schools, approximately—

3,000, or 30 per cent, are new teachers without previous experience;
3,700, or 37 per cent, are experienced teachers in a new position;
3,300, or 33 per cent, are teachers in the same position as last year.

10,000, total.

In comparing the per cent of new teachers in Pennsylvania this year with the available data from other States, it appears that in Alabama in 1918 there were "17.6 per cent rural and village teachers in their first year," [11] in South Dakota "31.2 per cent of the rural teachers are teaching their first school," [7] in Virginia in 1918–19 "35.9 per cent white teachers in one-teacher schools had no experience," [12] and in New York "17 per cent of the teachers were on their first year's experience in 1918–19." [9]

According to an unpublished investigation made by the bureau of certification and training of teachers in the State department of public instruction this number of 3,000 new teachers without any previous experience in one-teacher schools is approximately one-half of the entire number of the new teachers under county supervision.[13] The figures as shown by the report are 5,162 "new teachers." However, as eight of the counties of the State are not included in the report, if the same percentage of new teachers should obtain in these missing counties, it would mean that for this year, 1919–20, there are according to this State report approximately 6,200 "new teachers" among the entire number of 23,807 teachers under county supervision. This number of new teachers is considerably higher than the number of new teachers in 1917–18 given in the annual report issued by the State superintendent of public instruction in 1918, in which it is reported that 4,044 teachers under county supervision had no previous experience.[14]

According to a study made in Pennsylvania in 1917 there were 4,697 new teachers needed in the schools under county supervision, of whom 2,876 were needed in the rural schools.[15]

In the light of these facts it is evident that the demand for new teachers has greatly increased during the past few years. When it is considered that approximately 1,850 prospective teachers were graduated from the Pennsylvania State normal schools in 1919, of whom, according to the normal school principals,[16] approximately 15 per cent, or 275, entered one-teacher rural schools to meet the demand for approximately 3,000 new teachers alone, not to mention the 6,000 needed in all schools under county supervision, some estimate can be formed of the great teacher emergency in Pennsylvania. Many additional training facilities, as well as the enlarged use of those now in existence, must be provided or the schools, if they are to be continued, will be filled necessarily with an inadequate and poorly trained teaching force through lowered standards of admission.

[11] An Educational Study of Alabama. U. S. Bu. of Educ., Bul., 1919, No. 41, p. 349.
[7] Educ. System of S. Dak. U. S. Bu. of Educ. Bul., 1918, No. 31, p. 210.
[12] Va. Pub. Sch. Survey, p. 333.
[9] Engelhardt. The Teaching Profession in the State of New York.
[13] Unpublished report of the Teacher Shortage by the Bureau of Certification and Training of Teachers, Dept. of Pub. Instruction for Pennsylvania.
[14] Rep. State Supt. Pub. Instruction, Harrisburg, 1918, p. 611.
[15] Harbold, P. M. Proc. Principals of Pa. State Normal Schools, 1917, p. 24.
[16] Replies to a questionnaire sent to State normal-school principals of Pennsylvania.

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Chapter VII.

SALARIES.

The salaries received by teachers in the one-teacher schools in Pennsylvania vary greatly, both in respect to those paid to teachers in schools other than one-teacher schools of the same county and in respect to those paid teachers in the same type of schools but in different counties. In addition to the data on salaries secured directly from the teachers of the 18 counties covered by the questionnaire for the year 1917–18, information was obtained from 15 county superintendents regarding the salaries paid to all the teachers under their supervision in 1918–19. These facts have been worked up in the following tables and diagrams. The data taken from the official directories comprising the salaries of all the teachers in the one-teacher schools of the respective counties for the school year 1918–19 are complete and accurate, inasmuch as they are made up from the annual reports submitted to the county superintendents by the secretaries of the school boards of the various school districts. In each case the salary is the total amount received by the teacher during the school year, irrespective of the length of term, which, in Pennsylvania, varies from 7 to 10 months.[1]

ONE-TEACHER SCHOOLS IN TOWNSHIPS.

The salaries of the teachers in the one-teacher schools in the 15 counties represented by 2,368 cases, as shown in Table 44, division A, range from $315 to $800, a difference of $485 between the amounts paid the lowest and highest salaried teachers.

The median salary of this group is $411, which means that 1,184 teachers, or half the number, receive less than this amount for the school year. Interpreting this salary by months, it represents an amount equal either to $54 on the basis of the average school year for townships of 7.6 months (Table 46),[2] or to $34.25 on the basis of the calendar year. The middle 50 per cent receive a salary ranging from $383 to $478, with a quartile deviation of $47.50, which fact indicates a close grouping of the salaries about the mid-point.

[1] Since these data on salaries were gathered and tabulated the Pennsylvania Legislature, in June, 1919, passed what is known as the "Woodruff salary bill." Through this measure the salaries of all teachers who received less than $100 per school month were increased 25 per cent in 1919–20, those receiving $100 and not more than $150 were increased 20 per cent, etc. Since this law was interpreted to affect the teaching position, and since practically all the teachers in the rural schools received less than $100 per month in 1918–19, as will be shown in this study, for practical purposes it is therefore safe to add 25 per cent to the amount of salary herein set forth, to determine the salaries paid during the current school year 1919–20. Pa. Sch. Law, and app., 1919, Art. XII, sec. 1210.

[2] See p. 66.

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TABLE 44.—*Distribution of salaries of teachers in elementary one-teacher schools, two and more than two-teacher schools, and elementary schools combined in townships of 15 counties in 1918–19.*

DIVISION A—ONE-TEACHER SCHOOLS.

No. of county.	Salaries.																						Total.	Median salaries.
	$300	$325	$350	$375	$400	$425	$450	$475	$500	$525	$550	$575	$600	$625	$650	$675	$700	$725	$750	$775	$800	$850	$900 or more.	
1	5	.....	29	50	50	.....	37	39	.....	9	1	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	221	$414
2	3	.....	14	44	106	4	63	36	18	.....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	293	420
3	90	.....	7	58	28	13	.....	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	206	378
4	.....	.....	18	3	15	8	12	40	19	18	2	23	.....	8	3	2	.....	.....	.....	.....	.....	.....	.....	171	494
5	.....	.....	2	1	9	4	2	.....	4	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24	425
6	.....	.....	3	2	5	29	12	52	44	20	15	9	2	6	2	3	.....	.....	2	.....	.....	.....	.....	206	500
7	20	2	19	25	28	1	30	20	2	3	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	152	409
8	10	4	20	27	22	.....	22	7	4	.....	1	1	.....	1	.....	.....	3	.....	.....	.....	.....	.....	.....	122	400
9	10	.....	3	9	12	2	.....	2	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	40	396
10	.....	.....	.....	.....	7	3	6	48	7	17	9	3	16	8	.....	2	.....	.....	2	.....	.....	.....	.....	128	500
11	3	.....	22	11	5	23	3	3	12	11	4	4	.....	6	.....	.....	5	.....	5	.....	.....	.....	.....	117	444
12	22	.....	25	31	39	.....	4	1	.....	2	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1	.....	.....	126	388
13	45	.....	8	21	40	.....	16	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	132	385
14	20	.....	2	21	7	13	1	8	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	73	393
15	18	2	61	68	121	6	74	4	.....	2	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	357	406
Total	246	8	233	371	494	106	282	272	113	84	38	41	19	29	5	7	10	.....	9	.....	1	.....	.....	2,368	411

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TABLE 44.—*Distribution of salaries of teachers in elementary one-teacher schools, two and more than two-teacher schools, and elementary schools combined in townships of 15 counties in 1918–19*—Continued.

DIVISION B—TWO AND MORE THAN TWO-TEACHER SCHOOLS.

1				17	15		21	23			3						1				2			82	$461
2				3	23	2	35	14	14		16		4											111	490
3	9		7	22	13	4		6		4			1											66	392
4			2	2	4	2	2	9	8	7		13	1	5	5	3	5		1		4			73	577
5				1	2			2	2	1		1	1											10	500
6						5		15	7	11	17	4	10	3	6		2		3					83	556
7							3	2	1				1											7	488
8		1		1	1	3	2	4	38	7	2	7	1	4			1		1				2	75	517
9	3			2	6	3	2	4	2	2	2			1										27	450
10					8		6	19		8	8	10	11	14	9		7		8			6	2	116	599
11			1			3		9	7	18	5	8	11	22	19	6	18	8	15	3	2	5	6	166	649
12	1		2	1	5	1		4		1				3	6	11	5	4	5		6		5	60	699
13			1		1		1	1		1														5	450
14	1				1	2		2																6	433
15			4	11	4		14	2	5		3		3											46	458
Total	14	1	17	60	83	25	86	116	84	60	56	43	44	52	45	20	39	12	33	3	14	11	15	933	519

DIVISION C—TOWNSHIP ELEMENTARY SCHOOLS COMBINED.

260	9	250	431	577	131	368	388	197	144	94	84	63	81	50	27	49	12	42	3	15	11	15	3,301	$449

...$800; first quartile $383, median $411, third quartile $478, quartile deviation $47.50; Division B: Range, $315–$1,300; ... third quartile $630, quartile deviation $85; Division C: Range, $315–$1,300; first quartile $393, median $449, ... $57.50.

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Now, turning from the study of the group of counties as a whole, wide differences in salaries paid in the individual counties are noticeable. The median salaries of 8 different counties are lower than the group median, $411; county 3, with a median of $378, falls as far as $33 below that of the entire group. Its range extends from $315 to $485, this latter amount being only $7 higher than the third quartile (the 75 per cent point) for the entire group. County 13, while having the same low range as county 3, $315–$485, has, however, a better distribution in salaries, evidenced by its median falling on a higher point on the scale, namely, $385.

In contrast with these counties ranking low in salaries as compared with the standards for the group as a whole, is county 10, which has a median salary of $500. The salaries of one-half the teachers of this county are greater by $22, or more than the amount representing the 75 per centile, $478, of the composite group. County 6 likewise has a median salary of $500, which is $122 higher than the mid-point of county

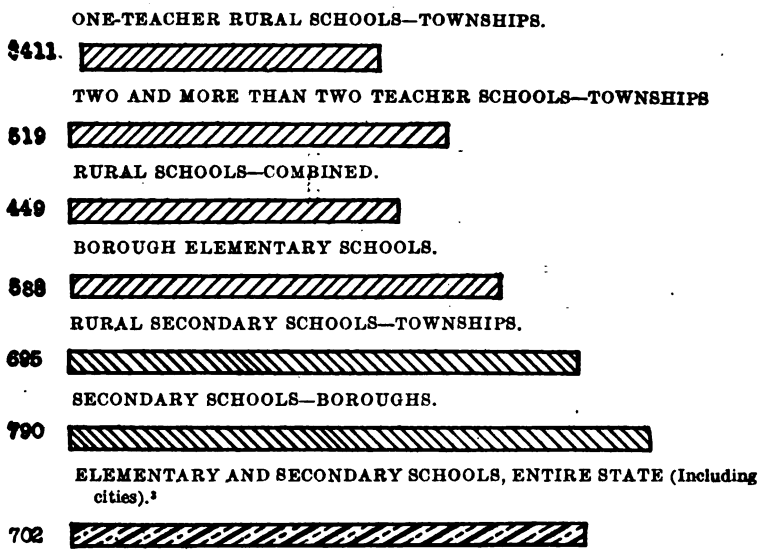

DIAGRAM 5.—Distribution of median salaries of elementary and secondary teachers in 1918–19 in the different types of schools in Pennsylvania.

3, $378, the lowest with respect to salary of all the counties reporting, and $89 higher than the median salary for the entire group, thus indicating an astonishingly wide range in median salaries.

SCHOOLS OF TWO AND MORE THAN TWO TEACHERS IN TOWNSHIPS.

In order to show the true situation concerning the salaries paid teachers in the one-teacher schools in the open country, and to understand more thoroughly the causes for these existing conditions, it seems advisable to look into the salary situation in the schools of two and more than two teachers in townships. Table 44, Division B, indicates the salaries of the 933 teachers in these schools in the same 15 counties used in the previous division. The median salary for these teachers is $519; the range extends from $315 to $1,300; the middle 50 per cent from $460 to $630, with a quartile deviation of $85, which is almost twice as great as the deviation in salaries of teachers in the one-teacher schools, thus indicating a much wider distribution of salaries about the point of central tendency. In comparing the median salaries of the teachers in one-teacher schools, Division A, with the median salaries of those

[3] Statistics of State School Systems, 1917–18, Bonner H. R., U. S. Bu. of Ed., Bul. 1920, No. 11, P. 42.

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in two and more than two-teacher schools, Division B, of the same individual counties, it will be observed that the extent of difference in salaries in the two types of schools is most pronounced, ranging from $311 in county 12 to $14 in county 3. The average difference for the entire group of 15 counties is $91.

It should be especially emphasized that the median salary, which for practical purposes is approximately the same as the arithmetical average, is, in the case of the teachers in the schools of two and more than two teachers, $108 higher than that of the one-teacher schools in the same townships of the respective counties. Such conditions exist in spite of the fact that these two types of schools are frequently found in townships controlled by the same board of directors, in whose hands lies the power of determining the amount of salary paid the teachers. Upon investigating some of the individual school districts in these counties, the writer finds that in the same townships teachers in the schools of two and more than two teachers are receiving as high as $20 more monthly salary than teachers with practically the same qualifications and in many cases an equal amount of experience in the one-teacher schools. In other words, teachers are frequently transferred by the school boards from a one-teacher school to a more centralized village school of two or more than two teachers in the same district, not only being paid a larger salary, but in many cases given a janitor besides. These facts may help to explain the difficulties that county superintendents have to face in stabilizing their teaching force, and that school boards in their shortsightedness bring upon themselves in securing teachers to fill the vacancies in these one-teacher schools.

The grand total distribution of the salaries paid the 3,301 teachers, including all schools of the townships for the 15 counties combined, will be found in Division C, Table 44. The median salary for this combined group of township elementary teachers is $449, and the first and third quartiles, $393 and $508, respectively, with a quartile deviation of $57.

BOROUGH ELEMENTARY SCHOOLS.

The data relating to salaries in boroughs help to throw further light on the salary situation of the one-teacher schools. The median salary of the 1,205 borough elementary teachers as found in Table 45 is $588. At a glance one may see that this amount is $139 higher than the median salary ($449) paid to the teachers in the combined group of schools in townships in the same counties, and $177 higher than the median salary ($411) paid to teachers in the one-teacher schools in the open country.

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TABLE 45.—*Distribution of salaries of teachers in elementary schools in boroughs of 15 counties, 1918–19.*

No. of county.	$300	$325	$350	$375	$400	$425	$450	$475	$500	$525	$550	$575	$600	$625	$650	$675	$700	$725	$750	$775	$800	$850	$900 or more.	Total.	Median salaries.
1	.....	.....	.....	.....	6	1	.....	2	3	11	4	12	7	14	2	5	2	2	4	1	1	2	2	81	607
2	.....	.....	.....	.....	1	.....	.....	4	3	30	1	49	1	19	.....	10	2	1	1	2	.....	.....	.....	124	587
3	2	.....	2	.....	2	.....	.....	12	.....	24	7	18	1	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	72	544
4	.....	.....	.....	.....	.....	.....	.....	3	2	24	14	14	10	29	7	2	17	4	13	2	1	1	1	144	630
5	.....	.....	.....	.....	.....	.....	.....	.....	2	.....	.....	13	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	16	588
6	.....	.....	.....	.....	.....	.....	.....	.....	5	21	5	32	6	6	.....	4	3	.....	2	.....	2	.....	.....	86	585
7	.....	.....	1	.....	1	3	4	4	27	2	19	14	1	10	1	3	2	.....	.....	.....	.....	.....	.....	92	587
8	.....	.....	.....	1	3	2	1	10	2	12	5	14	.....	21	.....	8	1	.....	1	.....	1	.....	.....	82	584
9	.....	.....	.....	.....	.....	.....	.....	.....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5	500
10	.....	.....	.....	.....	.....	.....	.....	7	.....	1	3	14	5	19	8	12	8	2	3	4	2	4	3	95	649
11	.....	.....	.....	.....	.....	.....	3	.....	6	11	.....	19	6	17	15	19	8	8	6	4	6	4	2	134	659
12	1	.....	.....	.....	1	.....	14	19	1	18	1	10	.....	12	.....	3	1	.....	1	.....	1	1	.....	84	534
13	.....	.....	.....	.....	3	2	2	5	11	2	2	5	4	2	.....	1	.....	.....	.....	.....	.....	.....	.....	39	518
14	.....	.....	.....	.....	.....	.....	1	4	.....	11	.....	3	.....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	24	542
15	1	.....	1	3	5	3	2	16	18	16	6	26	4	10	1	14	1	.....	.....	.....	.....	.....	.....	127	549
Total	4	.....	4	4	22	11	27	86	85	183	67	243	45	168	34	82	45	17	31	13	14	12	8	1,205	588

Range $315 to $1,100, first quartile $533, median $588, third quartile $643, quartile deviation $55.

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LENGTH OF SCHOOL TERM IN TOWNSHIPS AND BOROUGHS.

The length of the school term is undoubtedly a determining factor in explaining the marked variations in teachers' salaries prevalent in the counties throughout the State. Table 46, Divisions A and B, indicate in months the length of school terms in townships and boroughs of the 15 counties previously discussed in this chapter according to the 1918 report of the State superintendent of public instruction for Pennsylvania.[4] There are 629 school districts in these 15 counties, of which 403, or 64 per cent, are townships and the remaining 226, or 36 per cent, are boroughs. It will be noticed that the average length of term in townships is 7.6 months, while that in the boroughs is 8.6. Fifty-eight per cent, or over half, of the townships have a school term of 7 months, the minimum requirement by law, while only 11 per cent of the boroughs limit their terms to this minimum standard. On the other hand, it is interesting to note that almost the reverse is true in the case of the 9 months' term, namely, 53 per cent in boroughs, and 14 per cent in townships. In the case of the 8 months' term, townships and boroughs show no appreciable difference.

TABLE 46.—*Length of school terms in months in townships and boroughs of 15 counties in 1918.*

DIVISION A—TOWNSHIPS.[1]

Months.	Counties.															Total.	Per cent.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
7	27	32	28	3	3	5	16	17	2	9	8	13	21	13	35	232	58
8	1	9	8	11	3	33	4	3	5	4	12	4	....	6	1	104	26
9	....	....	1	17	....	17	2	2	....	3	14	3	....	....	....	59	14
10	....	....	....	....	....	....	....	....	....	....	7	1	....	....	....	8	2
Total	28	41	37	31	6	55	22	22	7	16	41	21	21	19	36	403	100

DIVISION B.—BOROUGHS.[2]

Months.	Counties.															Total.	Per cent.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		
7	2	3	7	....	....	....	1	2	....	....	....	2	3	....	4	24	11
8	8	5	4	1	1	5	6	4	....	1	....	1	4	....	22	62	27
9	6	14	9	16	1	11	4	12	....	6	14	9	2	5	10	120	53
10	....	2	....	5	....	1	....	....	1	3	9	....	....	....	....	20	9
Total	16	24	20	22	2	17	11	18	1	10	23	12	9	5	36	226	100

[1] Arithmetical average of terms, 7.6 months.
[2] Arithmetical average of terms, 8.6 months.

When the practice in individual counties is considered, it is apparent that there is very great variation in the length of school terms among the townships and boroughs. In counties 1 and 13 all the townships have a 7 months' term, with the exception of one township found in county 1, while 20 out of 25 boroughs in these same counties have 8 or 9 months' terms, which facts show that the townships, with 98 per cent maintaining a 7 months' minimum term, in comparison with the boroughs are being very much handicapped educationally by their shorter school terms. On the other hand, counties 6 and 11 have 76 out of 96 township districts with 8 or 9 months' terms, with county 11 having as many as 7 townships maintaining a school term of 10 months.

[4] Rep. Supt. Pub. Instruction, 1918, pp. 372-601.

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The practice in these townships, in comparison with the boroughs of the same counties, shows that the length of school term is relatively the same. This practice is a commendable feature in the management of the schools on the part of the school boards of these townships, inasmuch as it affords educational opportunity equal to that offered in the boroughs.

In the light of these facts it will now be seen what bearing the variation in the average length of school term has on the salary paid the teachers in the different types of schools. By considering the average school term for townships as 7.6 months, and the yearly salary as either $411, the median salary for the teachers in one-teacher schools (Table 44, Division A), or $519, the median salary for the teachers in the school

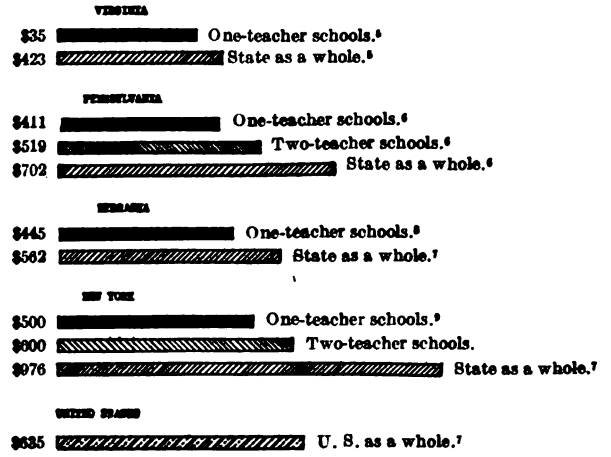

DIAGRAM 6.—Median teachers' salaries in Pennsylvania in one-teacher schools, in two-teacher schools, and in the State as a whole in 1918-19, compared with a typical Eastern, Southern, and Western State and United States.

of two and more than two teachers (Table 44, Division B), it will be found that the average monthly salary is, in the first case, $54, and in the second, $68. Taking the median salary as $449 for the entire group of teachers in townships (Table 44, Division C), and dividing by 7.6, the average number of months in the school term, it shows a monthly salary of $59. However, if we consider 8.6 months the average length of term for boroughs, and the median borough salary as $588 (Table 45), it will be seen that the average monthly salary is $68.

The above facts show that the average monthly salary in boroughs is $9 higher than the average salary received by the combined group of elementary teachers in townships. The average monthly salary for the teachers in schools of two and more than two teachers in townships is $68, exactly the same as the average monthly salary for the boroughs, which means that the higher salaries paid to teachers in boroughs, as compared with the schools of two and more than two teachers in the townships, are due apparently to the longer school term rather than the larger monthly salary.

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[5] Va. Pub. Sch. Survey, pp. 142, 337.

[6] See p. 62.

[7] Bonner, H. R. Statistics of State Sch. Systems, 1917-18, U. S. Bu. of Educ., Bul. 1920, No. 11, p. 114.

[8] The Rural Teacher of Nebraska. U. S. Bu. of Educ., Bul. 1919, No. 20, p 53.

[9] Engelhardt, F. The Teaching Profession in the State of New York.

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However, the significant fact in all of this is that the teachers in one-teacher rural schools in these 15 counties receive on an average $14 per school month less than the teachers in the schools of two and more than two teachers in the same townships, have the same length of school term, and are controlled by the same boards of education. There seems to be no logical reason why teachers of practically the same training and experience in one-teacher rural schools should receive less salary than those in schools of two or more than two teachers, and since the facts show that this difference does exist to such an extent as to average $14 per month, not to mention the extreme differences at the upper and lower ends of the range, it certainly does give a tremendous argument in favor of an extra State "bonus" to these teachers. This principle was recognized in the recent Woodruff salary bill providing an extra State bonus of $5 per month to rural teachers, but we can not see any reason why this small amount should be considered at all adequate to meet the situation in Pennsylvania, provided the bonus scheme is decided upon as the best plan to solve this, one of the most difficult phases of the rural school problem.

The evidence so far cited seems to warrant the conclusion that one of the main factors in explaining variations in annual salary in counties is the difference in length of school terms in townships and boroughs. From this pronounced difference between townships and boroughs, and from the added fact that school boards in these townships and boroughs usually pay only the minimum salaries, teachers would naturally be drawn, on economic grounds alone, if on no other, from the rural one-teacher schools to the schools of two and more than two teachers in townships paying higher salaries, and of course to borough elementary schools with the longer school terms.

It is also a noteworthy fact that many boroughs have a small number of teachers, consisting in some of the counties of 1, 2, and 3 teachers, and in two of the counties listed in Table 46 the boroughs have an average of 4 teachers for the entire county. Certainly a situation, for example, in which 9 teachers in a township receive a minimum salary of $45 or $50 per month for a 7 months' term, when in the same township there is located a small borough of 1, 2, or 3 teachers receiving a minimum salary of $55 or $60 with an 8 months' term, to say the least is not conducive to the maintaining of a stable teaching force or the improving of the status of the teacher in the one-teacher schools of such a township.

One might well ask the question whether some form of county local unit of more centralized school control would not help to solve these problems directly affecting the rural teachers, in which the county superintendent and county board of education would have more power in maintaining more uniform salary schedules and a more equitable school term.

SALARY IN RELATION TO CERTIFICATES.

Since it was shown in the previous chapter that the types of certificates held generally by teachers in the one-teacher rural schools in Pennsylvania are provisional, professional, permanent, and State normal certificates or diplomas, we shall now see how salaries in 1918, as reported through the questionnaires, are distributed on this basis. In the accompanying Table 47, the salaries of 1,383 teachers from 18 counties of the State are distributed according to the type of certificates held. Of this total number reporting, 47 per cent hold provisional certificates, 22 per cent professional, 13 per cent permanent, and 18 per cent State normal certificates or diplomas, which percentages correspond quite closely with the percentages of certificates held by the teachers in 28 counties of the State as reported in Chapter V.

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TABLE 47.—*Salaries paid to teachers in one-teacher schools according to certificates held.*

Certificates.	$300–$324	$325–$349	$350–$374	$375–$399	$400–$424	$425–$449	$450–$474	$475–$499
Provisional	354	10	80	50	79	39	13	14
Professional	.....	.....	.....	162	38	42	9	24
Permanent	.....	.....	.....	.....	113	6	8	31
Normal certificates and diplomas	.....	.....	.....	36	85	30	19	42
Total	354	10	80	248	315	117	54	111

Certificates.	$500–$524	$525–$549	$550–$574	$575–$599	$600–$649	$650–$700	Total.	Per cent.	Median salaries.
Provisional	2	1	1	.....	.....	.....	648	47	$323
Professional	3	13	5	2	1	.....	299	22	398
Permanent	8	13	5	1	3	1	189	13	421
Normal certificates and diplomas	6	11	9	5	3	1	247	18	427
Total	19	38	20	8	7	2	1,383	100	400

By studying this table one can see that over 50 per cent of the teachers holding provisional certificates receive a salary of $315, the minimum legal salary for a seven-months' school term in 1918.[10] The second largest number in the group holding provisional certificates receive a salary of $360, which amount is the minimum monthly salary of $45 required by law, for an 8 months' term. Practically 75 per cent of the number of teachers who reported holding provisional certificates receive a minimum salary of $45 per month for a 7 or 8 months' school term.

In the case of teachers holding professional and permanent certificates, more than half the number receive $385 and $420, respectively—again the minimum monthly salaries of $55 and $60 required by law for these types of certificates in 1918 for a 7 months' term.[11] It is also noteworthy that the second largest number of teachers in each of these groups receive the minimum salaries for an 8 months' term, $440 and $480, respectively. The quartile deviation of both groups holding professional and permanent certificates is very small, indicating a close distribution about the medians which are the legal minimum salaries.

The range of salaries for teachers holding normal-school certificates or diplomas is very much greater than for those holding provisional, professional, and permanent certificates, namely, $385 to $700; however, the median salary for this group is only $427, just $6 more than the median salary for the teachers holding permanent certificates, and $29 higher than the median for those holding professional certificates. This can probably be explained from the fact that the minimum salary by law in 1918 for a normal-school graduate with less than two years' experience was $55, the same as that paid to a teacher holding a professional certificate, and $60 for a normal-school graduate of two or more years' experience, the same amount received by a teacher holding a permanent certificate.[12] Thus, it can be seen that nearly 60 per cent of the teachers holding normal certificates and diplomas receive the minimum salary of $385 and $420 for a seven months' term, and that 30 per cent of the group receive $440 and $480, the minimum salary, for an eight months' term.

The above facts clearly show that, in the case of each of the four types of certificates, over 50 per cent of the teachers in the one-teacher rural schools receive minimum salaries for a seven months' term, and that approximately 80 per cent of all the teachers reporting receive the minimum amount required by law, either for a seven or an eight months' term. One would naturally expect that a great many teachers holding the lower class of certificates requiring practically no professional training would receive the minimum salary, but to discover that as many as 78 per cent of the teachers professionally trained, holding State normal certificates or diplomas, are receiving the minimum monthly salary of $55 or $60 is startling evidence against the unfortunate

[10] Pa. Schl. Laws, and app., 1919, Art. XII, sec. 1210, part 4.
[11] Ibid.
[12] Sch. Laws of Pa., 1917, Art. XII. sec. 1210.

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practice of school boards in their nonrecognition of professional training by their persistence in paying these teachers only the minimum amount required by law. These facts alone show that the minimum-salary law is probably the most potent factor in determining salaries in the rural districts.

The same facts and tendencies prevalent among the combined group of counties which we have just discussed are probably even better illustrated in the accompanying Table 48, showing how salaries are distributed according to certificates in four typical counties. It is not the purpose of the writer to analyze the salaries paid teachers in these counties and the causes for the same, but merely to indicate, by using the four typical counties, the wide variations that exist in the number and kinds of certificates held by the teachers, together with their accompanying salaries. In counties 1 and 2 a large majority of the townships have a minimum school term of seven months, while in counties 3 and 4 more than one-half have eight and nine months' terms (Table 46). The same general practice of paying the minimum salary required by law, previously shown as prevailing among the counties as a whole, is even more apparent in each of these individual counties.

TABLE 48.—*Salaries paid to teachers in one-teacher schools according to certificates held*

(Four typical counties.)

COUNTY 1.

Certificates.	$300-$324.	$325-$349.	$350-$374.	$375-$399.	$400-$424.	$425-$449.	$450-$474.	$475-$499.	$500-$524.	$525-$549.	$550-$574.	$575-$599.	$600-$624.	$625-$649.	Total.
Provisional	47		2	3											52
Professional				26	2										28
Permanent					16										16
Normal certificate or diploma				3	6		1								10
Total	47		2	32	24		1								106

COUNTY 2.

Provisional	36		10	3											49
Professional				30	6		1		1						38
Permanent					19	1		1							21
Normal certificate or diploma				3	5										8
Total	36		10	36	30	1	1	1	1						116

COUNTY 3.

Provisional	30	2	12	5	9	1	1	1	1						62
Professional				20	10	2	3	3		2					40
Permanent					7	5	4	2	2		1				21
Normal certificate or diploma				6	6	4	1	2	1	1	1				22
Total	30	2	12	31	32	12	9	8	4	3	2				145

COUNTY 4.

Provisional	1	2	10	4	2	10	1	3			2				35
Professional						8		6		2		1			17
Permanent								9		2	3		1		15
Normal certificate or diploma				1		13	6	32	7	1	5	2			67
Total	1	2	10	5	2	31	7	50	7	5	10	3	1		134

Teachers from one-teacher rural schools with higher certificates migrate to schools of two and more than two teachers in townships, and to borough elementary schools to get increased salaries, causing vacancies in the rural schools which must be filled by county superintendents issuing temporary provisional certificates to a constantly changing corps of new inexperienced teachers. There are, of course, some rural school districts which provide for a longer school term or fix their salary schedule so that they can attract teachers with better academic and professional training; but these, as the facts indicate, are very much in the minority.

It might be in order to note here that in the questionnaire sent out to the teachers, they were asked to state the salary that they had received the previous year, as well as

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the present salary. In tabulating these results it appeared that, whenever salaries were increased, it was generally due to the minimum-salary law which went into effect in 1918, and the amount of increase was usually the minimum $5 or $10 per month increase required by law, depending on the type of certificate held.

BASES ON WHICH SCHOOL BOARDS RAISE SALARIES.

The factors and conditions which are taken into account by school boards as bases in determining increases in salary, according to the replies given by the teachers in the questionnaires, are listed in Table 49. Upon tabulating these different answers and omitting "no basis," fourth on the list, it is found that there are 57 different bases named.

TABLE 49.—*Bases on which school boards increase salaries as given by the teachers—Total distribution, followed by 8 typical counties.*

Bases for increased salaries.	Total 18 counties.	Typical counties.							
		1	2	3	4	5	6	7	8
Minimum salary law	337	40	51	8	26	24	68	13	17
Efficiency	96	6	5	2	10	2	21	1	.....
Experience	91	.....	3	.....	8	4	21	.....	5
No basis	43	1	.....	1	1	1	3	1	1
Certificate	40	.....	1	.....	.....	.....	.....	.....	.....
Legislature (when State raises it)	30	3	1	1	6	.....	.....	.....	.....
Taxation	29	.....	2	.....	1	.....	3	3	11
Do not know	25	.....	1	1	.....	1	4	.....	2
Experience and certificate	19	.....	1	.....	.....	13	2	.....	3
When compelled	18	.....	2	.....	.....	3	2	.....	2
Efficiency and certificate	14	1	2	.....	.....	.....	8	.....	.....
Professional training	13	.....	.....	.....	.....	.....	1	.....	11
Experience and efficiency	12	.....	.....	2	.....	.....	8	.....	1
Salaries are not raised	8	.....	.....	.....	.....	1	.....	2	.....
$5 per month	7	.....	.....	5	.....	.....	.....	.....	.....
Amount of work done	6	.....	.....	.....	.....	.....	5	.....	.....
Change of school	6	.....	.....	.....	5	.....	.....	.....	.....
Education	6	.....	.....	.....	.....	5	.....	.....	.....
State appropriation	6	.....	.....	.....	.....	.....	2	.....	.....
$25 a year	6	.....	1	.....	.....	.....	.....	1	.....
High cost of living—clothing	5	.....	1	1	.....	.....	1	.....	1
$1 per month each year after fifth	5	1	.....	.....	.....	.....	.....	.....	.....
Protest of teachers	5	.....	.....	4	1	.....	.....	.....	.....
Scarcity of teachers	5	1	.....	2	.....	.....	.....	.....	.....
$25 every two years	4	.....	.....	.....	.....	.....	.....	.....	1
After 2 years $5 per month	6	.....	1	.....	.....	.....	1	.....	.....
First year experience, later law	4	.....	.....	.....	.....	1	2	.....	.....
Limit	4	.....	.....	.....	1	.....	.....	.....	.....
Number of pupils	4	.....	.....	.....	.....	.....	.....	1	.....
$25 a year until $65	4	.....	.....	.....	1	.....	.....	.....	.....
War basis	3	.....	2	.....	.....	.....	1	.....	.....
Yearly	3	.....	.....	.....	.....	.....	1	2	.....
Absolute necessity	3	.....	.....	.....	.....	.....	2	.....	.....
After two years	3	.....	.....	1	.....	2	.....	.....	.....
After visiting five schools	3	.....	1	.....	.....	2	.....	.....	.....
After 2 years $10 per month	3	.....	.....	.....	.....	1	.....	.....	.....
After 2 years $25 year until maximum	3	.....	.....	.....	.....	.....	1	.....	.....
Experience (one case favoritism)	3	.....	.....	.....	.....	.....	1	.....	.....
To prevent teachers going to towns	2	.....	.....	.....	.....	.....	1	.....	.....
Whim of directors (by their own ideas)	2	.....	.....	1	.....	1	.....	.....	.....
Because I earned it	2	.....	.....	1	.....	.....	.....	.....	.....
Custom	2	.....	.....	.....	.....	1	.....	.....	.....
Equalization of salaries	2	.....	.....	1	.....	.....	.....	.....	.....
Extra work	2	.....	.....	.....	.....	.....	.....	1	.....
Education and experience	2	.....	.....	.....	1	.....	.....	.....	.....
Income	2	.....	.....	.....	.....	1	.....	.....	.....
If satisfactory, after first year	2	.....	.....	.....	.....	.....	1	.....	.....
Limit $55	2	.....	.....	1	.....	.....	.....	.....	.....
Money in treasury	2	.....	.....	.....	.....	.....	.....	1	.....
Number of pupils and ability	2	.....	.....	.....	.....	1	.....	.....	.....
Personal persuasion	2	.....	.....	1	.....	.....	.....	.....	.....
Raised twice after obtaining professional certificate	1	.....	.....	.....	.....	.....	1	.....	.....
Regulated scale	1	.....	.....	.....	.....	1	.....	.....	.....
State legislature and taxation	1	.....	.....	.....	.....	.....	.....	.....	1
To secure and retain good teachers	1	.....	.....	.....	.....	.....	1	.....	.....
$2.50 per month until 5 years	1	.....	.....	.....	.....	.....	1	.....	.....
Three times in 10 years	1	.....	.....	.....	.....	.....	.....	.....	1
When a teacher less is needed	1	.....	.....	.....	.....	1	.....	.....	.....
Total number of replies	913	53	76	33	61	66	163	26	57

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Since the teachers were asked in the questionnaires not to name the district in which they taught, there is no way of telling the number of school boards that are represented in the 913 replies. However, since approximately two-thirds of the teachers in the one-teacher schools in the townships of the 18 counties answered, and since they undoubtedly came from all sections of the counties, we are probably safe in assuming that a large proportion of the school districts of each of the 18 counties is represented. Inasmuch as the average number of township school districts for these counties is 27, it would seem safe to estimate on two-thirds this number or 18, thus giving replies representative of the practice of 224 different school boards throughout the 18 counties.

The data in this table show that 36 per cent of the replies gave as a basis the "minimum salary law," and that approximately 10 per cent additional replies include such as "legislature," "certificate," "when State raises it," etc., making a total of 46 per cent of the replies which refer directly or indirectly to the minimum salary law.

Analyzing further the factors and conditions that school boards consider in increasing salaries, one is surprised to find that "efficiency" and "experience," factors which would naturally be expected to receive more frequent consideration, were each named in only 10 per cent of the replies. A number of the bases were given in combination, such as "experience and certificate," "State legislature and taxation," "experience and efficiency," etc. As a separation of these combinations into their constituent parts would be merely a matter of opinion, it may be well to consider them jointly as listed.

Those who may look for unique replies in data of this kind find them in such expressions as "personal persuasion," "when a teacher less is needed," "$1 per month each year after the fifth," "one case favoritism," "whim of directors," "after visiting five schools," etc.

It is of unusual interest to observe that "professional training" was named only 13 times, "education" 6 times, and the "high cost of living" 4 times. The latter fact is most unusual since the high cost of living has been one of the strongest arguments presented to school boards for increasing salaries.

Approximately 5 per cent of the teachers reported that their boards have no basis for increasing salaries, and 3 per cent admit frankly they "do not know." It should also be remembered that only 65 per cent of all the teachers who filled out the questionnaire answered the question which called for this information. Might this not indicate that a large proportion of teachers have no knowledge of the kind of consideration their school boards give the question of salaries, one of the most important factors in their social, economic, and professional welfare? It is not the purpose to offer these data on increasing salaries as necessarily conclusive evidence; but the material may be of importance from the standpoint of the many different kinds of reasons given, and from the fact that it helps to substantiate the previous conclusions concerning minimum salaries.

The discussion of this table thus far has been based on the distribution of the total number of replies as found in the first column of Table 50. Columns 1, 2, 3, etc., just following the total column, show the distribution of replies in typical counties. It will be observed that there is about the same number of diversified answers in each of these counties, and that the percentages of the more numerous replies are practically the same. There are, of course, some differences, but it is difficult to speak of these in any conclusive way because of the unequal number and proportion of replies in the separate counties.

SALARY OF MEN AND WOMEN TEACHERS.

Tables 50 and 51 show the salaries paid to men and women teachers, respectively. Of the total number reporting, 1,369 teachers, 1,070, or 80 per cent, were women; and 299, or 20 per cent, men, which is practically the same proportion as is found to exist in the 20 counties of the State (Ch. II).[13]

The median salary for men teachers is $406, which is just $6 higher than that for women, namely $400, showing that the average salaries paid men and women teachers

[13] See page 8.

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in the one-teacher rural schools on the basis of these replies is practically the same. This is further emphasized by the fact that both in the case of the men and women teachers, the range in salaries extends from $315 to $700. However, the quartile deviation of the salaries received by women teachers is $53, which is twice the quartile deviation of the salaries received by the men, indicating a much greater variation and a wider distribution about the mid-point of the salaries paid women teachers as compared with those paid to men teachers. Let us now look at these tables from the point of view of the relationship existing between the experience of men and women teachers and their respective salaries.

TABLE 50.—*Relation of years of experience of men teachers to salaries.*

Salary.	Years of experience.																						Total.
	0	1	2	3	4	5	6	7	8	9	10	11	12–14	15–17	18–20	21–23	24–26	27–29	30–32	33–35	36–39	40–49	50–59	60	
$300–$324	21	5	17	4	1	...	1	...	...	...	1	...	...	1	1	...	...	...	...	...	...	...	...	...	52
325– 349	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
350– 374	7	4	6	1	...	2	...	2	2	1	1	...	2	1	...	...	...	...	...	...	...	...	...	...	29
375– 399	3	2	2	2	4	4	4	2	1	2	...	2	1	3	1	...	...	1	1	1	1	2	...	...	39
400– 424	2	1	2	1	5	7	7	4	1	5	3	...	14	12	11	7	9	5	3	3	5	3	3	...	113
425– 449	2	1	...	...	1	...	1	...	...	...	1	...	...	...	...	1	...	...	...	...	...	2	...	...	9
450– 474	...	...	1	...	2	1	3	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	9
475– 499	4	1	...	...	3	1	3	...	1	...	...	...	2	...	3	...	4	...	1	3	1	1	...	...	28
500– 524	1	...	...	...	1	...	...	...	1	...	1	...	1	...	...	...	...	1	...	...	...	...	...	...	6
525– 549	...	...	1	...	...	1	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	4
550– 574	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	2
575– 599	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	3
600– 624	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
625– 649	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
650– 674	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
675– 699	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Total	40	15	31	10	17	17	20	9	7	8	7	3	21	17	16	8	14	7	7	7	7	8	3	...	299

Median years of experience, 7; median salary, $406. r=.20 P. E.=±.037.

TABLE 51.—*Relation of years of experience of women teachers to salaries.*

Salary.	Years of experience.																						Total.
	0	1	2	3	4	5	6	7	8	9	10	11	12–14	15–17	18–20	21–23	24–26	27–29	30–32	33–35	36–39	40–49	50–59	60	
$300–$324	135	31	66	13	7	1	...	3	2	...	1	...	1	...	...	1	...	...	1	...	1	...	...	...	263
325– 349	3	1	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6
350– 374	53	8	22	13	5	1	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	106
375– 399	17	20	17	20	17	13	15	10	6	6	5	6	6	3	2	...	...	...	...	...	1	...	...	...	164
400– 424	17	12	10	11	18	7	9	2	11	10	4	22	13	7	4	6	5	2	3	4	3	1	...	...	190
425– 449	17	2	7	6	15	10	6	1	...	...	1	1	2	2	1	...	1	2	...	...	...	1	...	1	76
450– 474	6	11	6	1	2	1	3	1	1	...	1	...	3	1	3	...	...	...	...	...	...	...	...	...	40
475– 499	15	16	14	7	10	14	6	6	1	5	1	4	10	1	1	...	1	2	1	1	...	...	...	...	116
500– 524	1	...	2	3	3	2	1	3	3	2	...	1	...	2	1	...	...	2	...	...	...	...	...	...	26
525– 549	1	...	6	6	5	5	4	...	4	...	...	2	4	...	2	...	...	...	1	1	...	1	...	...	42
550– 574	1	...	1	1	3	1	1	1	...	2	2	...	1	1	3	...	...	...	...	...	...	...	...	...	18
575– 599	...	...	...	...	2	...	2	1	...	...	2	...	1	...	1	...	1	...	...	...	...	...	...	...	10
600– 624	...	...	...	...	1	...	...	1	1	...	...	...	...	...	1	...	...	1	...	1	...	1	...	...	7
625– 649	...	...	...	...	...	...	...	...	...	...	...	...	3	...	1	...	...	...	...	...	...	...	...	...	4
650– 674	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
675– 700	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Total	266	101	152	82	89	55	49	37	21	27	23	18	53	23	23	5	9	12	5	6	6	6	1	1	1,070

Median years of experience, 3.2; median salary, $400. r=.20 P. E.=±.0126.

RELATION OF SALARY TO YEARS OF EXPERIENCE.

Among the group of 113 men teachers in Table 50 receiving a salary in the class interval $400–$424, the median step, it is evident that their experience ranges from 0 to 50 or more years. The median number of years of experience of this group is 15; the quartile deviation is 8.5 years, showing that there is an unusually wide varia-

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tion in experience. Since the salaries of 52 teachers are found in the step $300–$325, it is apparent that they are holding provisional certificates, which by process of the law insure them a minimum salary of $315, and account for their experience-limit of 3 or less years (with the exception of 5 teachers, as shown in the table) since the State law stipulates that provisional certificates can be renewed yearly by examination for a period of only 5 years. The teachers in this group having more than 5 years' experience probably held provisional certificates before the above provision of the recently passed Pennsylvania school code became effective.[14]

The median years of experience of the entire group of men teachers as shown in Table 50 is 7. It will be noticed that practically all the teachers receive a salary less than $425 and have had less than 7 years' experience. In other words, only 30 teachers or approximately one-tenth of the teachers, are included in the group receiving more than $425 salary and having seven or more years of experience. This means that in the case of 110 men teachers, or 37 per cent of the group who receive a salary in the median step $400–$424 or less, experience—at least beyond the seventh year—is not a factor in determining the increase in salary. It will be seen by inspection that there is little positive correlation in this group beyond the median salary and the median years of experience. The coefficient of correlation was found to be r=.20 (Pearson's Product-Moment Method).

The replies of 1,070 women teachers, as shown in Table 51, indicate that the largest number, 263 teachers, receive a salary of $315. With the exception of five teachers, all of this number report five or fewer years of experience, with 135, or approximately 50 per cent, new teachers without experience. Half of the entire number of women teachers, 535, receive a salary less than $400, and have also had less than 3.2 years of experience. These teachers, like the men teachers, show the greatest range of experience of 0 to 50 years for the class interval in which the median salary is found, namely, $400–$424.

By drawing a line through the median years of experience, 3.2, and the median salary, $400, nearly 400 of the total group will be included in the small quadrant from $315 to $400 salary and from 0 to 3 years of experience.

Just as the same amount of salary is paid to a group of teachers having a wide range in years of experience, so it can be seen at a glance that there is an equal diversity in the salaries paid to those having had the same amount of experience.

While there is a positive correlation between years of experience and salary of .20 in the case of the men teachers and .20 in that of the women teachers (Pearson's Product-Moment Method), it is evident from the tables that these relationships are probably due to the grouping of salaries and years of experience about the median points, respectively. It is also apparent that experience seems to center about 2 and 4 years, while salaries group themselves about $385 and $420. The certificate laws in Pennsylvania undoubtedly have a great bearing on this positive relationship in the lower part of the range, since it will be recalled from the previous chapter that 2 and 4 years of experience are required by law of applicants for professional and permanent certificates, and also that $10 and $15 monthly minimum salary increases above the minimum salary for provisional certificates are required by the same law for each successive type of certificate.[15] Of course the working out of the minimum salary law in itself would in a sense automatically cause this positive relationship.

The data seem to establish the conclusion that there is less positive relationship than might be expected in ascending the scale of experience and salary, and that the falling off is most marked above the various medians indicating very little relationship between higher salaries and longer years of experience.

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[14] Pa. Sch. Laws, and app., 1919, Art. XIII, sec. 1302.

[15] Pennsylvania School Laws, 1917, Art. XII, sec. 1210.

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NUMBER OF INCREASES IN SALARY AS RELATED TO YEARS OF EXPERIENCE.

Since it has been shown that the factor of years of experience in general does not determine the amount of increase in salaries, let us now examine Table 52 to see what relation, if any, exists between the number of increases and years of experience. While over 500, or one-half the number of the 1,018 teachers submitting this information, have a median experience of 6.4 years, they had their salaries increased only three times. In other words, the average number of years of experience is slightly more than twice the average number of increases in salary for the same group of teachers. At first glance one would think this to be quite a good median relationship, but after studying the table more carefully, it is evident that there is probably very little correlation beyond 12 years of experience and 5 increases in salary. A large proportion of teachers receiving 3 and 4 increases, respectively, have been teaching morthan 12 years.

TABLE 52.—*Relation between number of increases in salary and years of experience.*

Years of experience.	Number of increases in salary.											Total.
	0	1	2	3	4	5	6	7	8	9	10	
1	33	62										95
2	36	113	8									157
3	10	49	21	7								87
4	10	21	35	16	4							86
5	4	16	24	17	1							62
6	4	11	30	15	3							63
7		5	20	16	2							43
8	1	4	10	9	6							30
9	1	3	10	9	4	2						29
10		1	16	8	5	3						33
11		1	6	4	4	2						17
12		1	7	11	10	1						30
13			4	5	5	2						16
14			4	8	7	5						24
15		1	1	3	9	8						22
16			1	1	2	3	2					9
17			4	7	8	6	2					27
18				6	4	2	1					13
19			2	4	4	2						12
20				2	9	3	3					17
21			3	5	2	2	1					13
22			2		3	1						6
23				1	1	2	1					5
24				1	3	1	1					6
25					1	3	1					5
26			1	2	3	1		1				8
27					1	1	2					4
28			1	1	2	4	3	1				12
29					1	2	2					5
30-31				5	1	2	2	5	1			16
32-33			1	2	4	5	4		1			17
34-35			1	1	3	3	2	2	1			13
36-37					3	1		3	1			8
38-39					1	2	1	1			1	6
40-44	1		1	2	3	2	3	2				14
45-49	1					1			1			3
50 and above				1	1	2		1	1			6
Total	101	288	213	169	120	74	31	16	6		1	1,019

r=.50 P. E.=±.016.

The important fact to be conveyed by this table is that the range in years of experience for teachers who have had no increase in salary is from 1 to 9; for those who have had 2 increases in salary, from 2 to 40; and for those who have had 3 increases the range is from 3 to 50 or more years of experience, with a median of 9.5 years. The data seem to show rather conclusively that teachers, at least beyond the median years of experience, 6.4 years, in many cases have not had the number of increases in salary determined by the years of experience. There is a positive correlation for the group as a whole, which can be indicated by r=.50 P. E.=±.016 (Pearson's Product-Moment Method).

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AGE OF MEN AND WOMEN TEACHERS AS RELATED TO SALARY.

Tables 53 and 54 show the salaries paid to men and women teachers on the basis of their ages. It will be seen that in Table 53 a large majority of the men teachers are 25 or less years of age. Beyond this age there seems to be practically no positive relationship between ages and amount of salary received. This can be illustrated best by studying the group of teachers receiving the salary of the median step, $400–$424, in which the distribution of ages extends all the way from 19 to 69 years. Since the median age of men teachers reporting is 27.3 years, it is especially interesting that the ages of the middle 50 per cent of this group of 118 teachers range from 28 to 45 years. In looking over the table more carefully, it is noteworthy that only 33 teachers beyond the age of 25, or approximately one-tenth of the group, receive more than $420.

TABLE 53.—*Relation of age of men teachers to salary.*

Ages.	$300–$324	$325–$349	$350–$374	$375–$399	$400–$424	$425–$449	$450–$474	$475–$499	$500–$524	$525–$549	$550–$574	$625–$649	$700	Total.
18	13		3			1								17
19	19		3		1	1								24
20	13	1	4	4	2	1	1							26
21	11	1	3	3		1	1	1		1				22
22	5		3	2	6	2		2						20
23	2		1	5	1		2	3					1	15
24	1		1	5	4	1		2		1				15
25			2	6	7		2	1	1					19
26				4	4									8
27			1	5										6
28				1	7									8
29				4	2			1						7
30			1	2	5	1		1	1					11
31	1			1	3		1							6
32			1	2	3									6
33					4									4
34			1	1	4									6
35					1									1
36				3	4	1								8
37				1	4			1						6
38					1		1	1						3
39			1	1	4									6
40			1	3	3									7
41					2	1			1					4
42				1	6			2						9
43					4									4
44					2				1					3
45				1	8							1		10
46					1	1								2
47		1		1	5			2						9
48					2			1						3
49								1						1
50				2	7	1	2	2			1			15
55			2	1	5			1						9
60			1	2	2	2	1	3						11
65 and above					4									4
Total	65	3	29	61	118	14	11	25	4	2	1	1	1	335

r=.41. P. E.=±.0312.

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TABLE 54.—*Relation of age of women teachers to salary.*

Ages.	$300–$324	$325–$349	$350–$374	$375–$399	$400–$424	$425–$449	$450–$474	$475–$499	$500–$524	$525–$549	$550–$574	$575–$599	$600–$624	$625–$649	$650–$699	$700	Total.
18	78	.....	29	5	3	6	1	2	.....	.....	.....	.....	.....	.....	.....	.....	124
19	80	.....	26	17	5	19	6	12	1	.....	.....	.....	.....	.....	.....	.....	166
20	78	2	18	12	11	15	6	19	2	1	.....	.....	.....	.....	.....	.....	164
21	29	2	15	30	14	12	13	7	.....	.....	1	.....	.....	.....	.....	.....	123
22	15	1	13	13	12	10	3	12	2	4	1	1	.....	.....	.....	.....	87
23	8	2	9	20	5	9	6	12	1	3	.....	.....	.....	.....	.....	.....	75
24	5	2	3	12	12	5	1	3	5	1	2	.....	1	.....	.....	.....	52
25	.....	1	5	12	8	3	1	3	1	2	1	2	1	.....	.....	.....	40
26	2	1	3	5	1	.....	.....	1	.....	2	.....	.....	1	.....	.....	.....	15
27	5	.....	3	8	6	5	1	6	2	1	.....	.....	.....	.....	1	1	30
28	.....	.....	2	6	8	.....	.....	2	.....	1	1	1	1	.....	.....	.....	22
29	.....	.....	1	8	4	.....	1	4	1	1	1	1	2	1	.....	.....	25
30	.....	.....	1	3	6	1	1	4	3	.....	2	.....	.....	.....	.....	1	22
31	3	.....	.....	2	8	.....	3	4	1	.....	3	.....	1	.....	.....	.....	25
32	2	.....	.....	1	6	.....	2	2	1	1	.....	.....	.....	.....	.....	.....	15
33	1	.....	2	.....	2	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	7
34	.....	.....	.....	1	5	1	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	9
35	.....	.....	1	2	4	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	9
36	.....	.....	1	1	5	1	.....	3	.....	.....	1	.....	.....	.....	.....	.....	12
37	.....	.....	1	.....	.....	1	.....	.....	.....	.....	.....	1	.....	1	.....	.....	4
38	.....	.....	.....	1	4	2	1	3	.....	1	.....	1	.....	.....	.....	.....	13
39	.....	.....	.....	.....	1	.....	1	1	.....	.....	1	.....	.....	.....	.....	.....	4
40	.....	.....	1	1	1	1	1	2	.....	.....	.....	.....	2	.....	.....	.....	9
41	.....	.....	.....	1	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3
42	.....	.....	1	.....	1	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	4
43	.....	.....	.....	1	2	1	.....	2	1	.....	1	.....	.....	.....	.....	.....	8
45	.....	.....	.....	1	2	1	1	1	1	.....	.....	.....	.....	.....	.....	.....	7
46	.....	.....	.....	.....	1	.....	.....	1	.....	1	.....	.....	.....	.....	.....	.....	3
48	.....	.....	.....	.....	1	1	.....	2	.....	.....	.....	.....	.....	.....	.....	.....	4
49	.....	.....	.....	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	2
50	1	.....	.....	.....	2	2	.....	1	.....	1	.....	.....	2	.....	.....	1	10
55	.....	.....	1	.....	1	1	.....	1	.....	.....	.....	1	1	.....	.....	.....	6
60 and above	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	1	1	.....	.....	.....	3
Total...	307	11	136	164	143	100	49	115	22	22	16	8	13	2	1	3	1,112

r=.42. P. E.=±.016.

In the case of the women teachers, one can easily see by inspection of Table 54 that there is a positive correlation existing between ages and salaries. It is rather surprising too, that as many as 500 women teachers are represented in the quadrant bounded by the medians 22 years in age and $400 in salary. The largest range in salary, $315 to $700, is found at the age of 27, and at least 80 per cent of the entire group of women teachers range in age from 18 to 27 years. The same condition holds true in this group as in the case of the men teachers, in that the range of ages is largest in the median salary step. However, we can not help but observe the long range in ages in the case of practically each salary paid, which can be well illustrated in the first class interval, $300–$324, in which the largest proportion of the entire group receiving the smallest salary, range in ages from 18 to 32 years.

Probably the outstanding fact in the data just presented is the scattering of cases both in respect to salary and age. While there is a definite positive relationship evident in the case of both men and women teachers between the age 22, or possibly 25 years, and a salary of $420 or less, on the other hand, there is practically an entire lack of positive relationship between ages and salaries in ascending the scales beyond these points. The relationships expressed in figures of correlation are r=.41 for men teachers and r=.42 for women teachers (Pearson's Product-Movement Method). In other words for the entire group of men teachers and women teachers there is only a slight tendency for older teachers to receive the higher salaries.

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YEARS OF EDUCATION AS RELATED TO SALARY.

In Table 55 the teachers are listed according to the number of years of education which they have had beyond the elementary schools, comprising the work done in high schools, normal schools, and colleges. In comparing the distribution in education ranging from 0 to 8 years with salaries received, it is at once noticeable that there is practically no definite tendency shown, as evidenced by the negligible correlation r=.04. Teachers with 0 years of secondary or higher education receive salaries from $315 to $600, while those with 4 or 5 years' academic or professional training beyond the elementary grades also receive salaries extending over the same range, with the largest number of teachers in each case receiving the minimum salary of $315. From the standpoint of salaries, the group receiving $315 and the group receiving $520 have secondary training extending over the same range of 0 to 6 years. These rather striking data further emphasize the fact that school authorities frequently fail to recognize by adequate tangible reward the education of teachers secured either before entering service or during service. It also further helps to establish the evidence previously expressed that years of experience, type of certificate, and local prerogative on the part of school boards are the predominating factors in determining salaries rather than academic or professional preparation in educational institutions. It would seem that the very low salaries paid rural teachers and the nonrecognition of standard practice in establishing salary schedules are directly or indirectly the principal causes of most of the unfavorable phases of the status of the rural teacher as brought out in this study.

TABLE 55.—*Relation between the years of education beyond the elementary school and salaries.*

Salary.	Years of education.										Total.
	0	½	1	2	3	4	5	6	7	8	
$300–$324	85	45	36	51	62	60	12	2	.....	.....	353
$325–$349	5	2	.....	2	1	.....	.....	.....	.....	.....	10
$350–$374	13	5	3	5	16	35	3	.....	.....	.....	80
$375–$399	67	33	33	30	41	23	5	5	2	.....	239
$400–$424	85	38	46	45	36	35	10	13	4	.....	312
$425–$449	21	10	12	11	13	18	12	11	3	1	112
$450–$474	11	6	8	5	5	4	3	2	.....	.....	44
$475–$499	24	6	10	11	18	13	8	7	2	.....	99
$500–$524	6	1	2	1	3	1	2	1	.....	.....	17
$525–$549	8	4	3	4	5	3	1	1	1	.....	30
$550–$574	3	1	1	6	1	.....	1	.....	.....	.....	13
$575–$599	1	1	2	2	1	.....	.....	1	.....	.....	8
$600–$624	2	1	.....	2	.....	1	1	.....	.....	.....	7
$625–$649	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
$650–$700	.....	.....	1	.....	1	.....	.....	.....	.....	.....	2
Total	331	153	157	175	203	193	58	43	12	1	1,326

Median salary=$398. Median years=2.1. r=.04. P. E.=±.018.

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Chapter VIII.

SUMMARY.

1. This study of the status of the rural teacher in Pennsylvania is based principally on a questionnaire distributed among the teachers in the one-teacher rural schools of 18 counties of the State. Out of the 1,450 questionnaires returned, 1,110, or 76.5 per cent, were answered by women; and 340, or 23.5 per cent, by men, averaging 62 per cent of the teachers enrolled in the one-teacher schools in each county respectively. Pennsylvania, with 10,038 one-teacher schools, ranks third among all the States of the United States, being outnumbered by Illinois and Iowa. Over 53 per cent of the teachers under county superintendents' supervision are teaching in one and two teacher schools, of which 42 per cent are in the one-teacher schools. The number of one-teacher schools varies throughout the 66 counties from 22 to 361, with the median county having 150. These counties range in size from 130 to 1,200 square miles, but the number of square miles to each one-teacher school ranges from 2.4 to 17.8 square miles.

2. In analyzing the *social and economic status* of the rural teacher it has been found that the percentage of men teachers, 24 per cent as compared with 76 per cent of women teachers, is greater in Pennsylvania than in any State of the Union for which there are data available, and greater than in the United States as a whole. The average age of beginning teachers is 19.2, but the ages of teachers range from 18 to 65, with an average of 22 years for women teachers, and of 26.7 for men teachers. Eighty-one per cent of the rural teachers are born and reared in the country districts and 19 per cent in boroughs and cities. One-half of the teachers participate on Saturday and Sunday in the social life of the community in which they are teaching.

Sixty per cent of the teachers pay for board and room amounts ranging from less than $50 to more than $250, with an average cost of $121 per year. On a monthly basis the average cost is $16, with the lowest amount $6 and the highest $30 or more per month. Only 9 per cent of the teachers are obliged to meet these living expenses for the entire calendar year. These facts substantiate the prevalent belief that living expenses for rural teachers are on a much lower scale than those of urban teachers.

Twenty-five per cent of the teachers, of whom most are men, receive an income of $200 or less, in addition to their teaching salary. It is rather surprising that approximately 40 per cent of the teachers have saved on an average approximately $100 per year from their meager salaries. Among this thrifty group are included the small percentage who carry life insurance and are members of beneficial associations, expending as dues from $5.20 to $150 per year. Practically all in this group subscribe for educational magazines and reference books in amounts from $0.50 to $50 per year.

3. Investigation of the *working conditions* of rural teachers shows that their schools range in size from 3 to 68 pupils, with an average of 26. The number of grades varies from 2 to 10, with the median falling among the group having 7 grades; however, 41.8 per cent of the schools are organized as eight-grade schools. The median number of class recitations is 25.6, varying from 9 to 50 per day; and 25 per cent of the teachers have school programs of 30 or more recitations per day. The data clearly indicate an extremely low correlation between the number of class recitations per day and

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the number of pupils enrolled, showing that a great proportion of the smaller schools are among the group having the larger number of daily recitations.

Only 31 per cent of the schools have libraries containing from 10 to 400 volumes, but 43 per cent of the rural teachers have access to libraries apart from the school library, for obtaining books and materials to aid them in their teaching. Since teachers in Pennsylvania are obliged to attend county institutes, it is quite surprising that 72 per cent voluntarily attend regularly the county local institute intended to help train teachers in service. Furthermore, as stated previously, teachers subscribe generally for educational and other current magazines of the type listed in Table 18 of the context.

The fact that rural teachers are supervised only from 15 minutes to 8 hours per school year and that the superintendent makes on an average one visit each year of from 30 minutes to one hour shows plainly that one of Pennsylvania's greatest needs is such a complete revision of the system of rural school supervision as shall involve much greater supervisory assistance. It should be recalled that county superintendents have no assistance in their work unless they have 200 or more teachers under their jurisdiction. In the counties that have assistant county superintendents, the average time spent by them in visiting each school, in addition to that spent by the county superintendent, is 2 hours per year. According to the statement of 69 per cent of the teachers, one or more school directors have visited their schools at least once during the year. Upon the impression gained from this visit frequently depends the election or reelection of a teacher, since, according to the replies of 70 per cent of the teachers, little or no consideration is given by the directors to the judgment of county or assistant county superintendents.

There seems to be very little community cooperation in the rural districts, as evidenced by the fact that only 28 per cent of the teachers reported the existence of parent-teacher organizations or any other type of community activity in connection with their schools. Since, in addition to this, very few patrons or residents of the various school communities take any interest in the schools, it would seem that a vital need in the rehabilitation of the rural schools is the development of an increased support and of a more sympathetic interest not only in the personal welfare of the teachers on the part of patrons and citizens, but also in the teacher's professional status and opportunities for growth on the part of administrative and supervisory officers.

4. In summarizing the *academic and professional training* of rural teachers, Pennsylvania has a very low standing in comparison with other States. Eighty per cent of the teachers received their elementary education in township schools in periods of 5 to 12 years, and the remaining 20 per cent in boroughs from 5 to 11 years, the average length being 68.2 months and 70.8 months, respectively, on the basis of the average length of school year for townships and boroughs. Thirty-nine per cent of the same group of teachers had had no training in a secondary school; and of the 61 per cent who attended secondary schools, only 22 per cent completed a four-years' course. It should be stated that some of the teachers who had never attended a recognized secondary school had received some academic instruction in high-school subjects given in the ninth and tenth grades in one-teacher elementary schools.

As to the professional training of this group of teachers, 76 per cent had no normal school training, and of the remaining 24 per cent attending a normal school for periods ranging from 6 weeks to 4 years in length, only 18 per cent completed the course. The extreme variations in preliminary training, evidenced from the fact that 55 per cent of the normal school graduates had not had secondary training, as well as the varied amount of time actually spent by teachers in preparation in normal schools, are largely due to the normal school system, which for a number of years received students with all types of training from the completion of an elementary school course to that of a standard four years' secondary course.

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As regards further training during service, 62 per cent have had no academic or professional schooling since entering the profession. Of the 38 per cent who had such supplementary education 10 per cent attended summer private academies, 8 per cent summer local or county normal schools, 12 per cent summer State normal schools, and 6 per cent summer colleges, all ranging from one to four terms of six weeks' duration. The determining factor in the selection of an institution was found to be the type of certificate held and the institution most accessible.

Since only 13 counties have State normal schools within their boundaries, and since the 53 remaining counties must depend in a large measure upon private academies and summer county or local normal schools to provide opportunities for teacher training, it is evident that one of the pressing problems before the State is the provision for properly organized training facilities in high schools, in county training schools, or in additional State normal schools, if the supply of educationally and professionally trained teachers shall in any way meet the demand in the rural districts.

5. Regarding the *certification* of rural teachers in Pennsylvania, there is undoubtedly need for more exacting certification laws, as well as for the establishment of a larger number of accredited teacher training institutions. In 1919–20, on the basis of a study of the directories of 28 counties, including all the teachers, the percentage of the various types of certificates held by teachers in one-teacher schools is as follows: Provisional 52, professional 24, permanent 10, and normal school 14, with such extreme variations among counties as 19 to 73 per cent in the case of provisional certificates; 2 to 40 per cent, professional certificates; 1.9 to 36 per cent permanent certificates; and 0.5 per cent (1 out of 179 teachers) to 68 per cent (147 out of 216 teachers) normal school certificates. The data further emphasized the fact that 76 per cent of the teachers hold provisional and professional certificates, obtained through examinations given exclusively by the 66 county superintendents of the State.

In the two and more than two-teacher schools, 25 per cent of the teachers hold normal-school certificates, and 32 per cent provisional certificates, in contrast with the 14 per cent and 52 per cent, respectively, in the one-teacher schools in the same counties. This inequitable distribution of the qualifications of teachers, as evidenced by certificates, is still further emphasized in the fact that 58 per cent in the borough elementary schools of the same counties are normal-school graduates, while only 6 per cent of the teachers hold the provisional—the lowest type of certificate.

Examination of the certificate situation of five typical counties over a period of three years, 1917–1919, showed a tendency toward marked increase in the number of provisional certificates and a consequent decrease in the number of normal-school certificates, in spite of the fact that the county showing the largest decrease in normal-school graduates had a normal school located within its boundaries.

The median experience of the teachers on the basis of their certificates is for provisional certificates 0.9 year, for normal-school certificates 4.5, for professional certificates 4.9, and for permanent certificates 15.9 years. From the standpoint of age, the average for teachers holding provisional certificates is 20.3 years, professional, 24.8 years, normal school, 23.9 years, and permanent, 37.3 years.

In considering the certificates of the teachers on the basis of their academic and professional training, the largest proportion of those holding permanent and normal-school certificates or diplomas have had no training in secondary schools. Of the number completing a four-years' course in a secondary school, the largest proportion hold provisional certificates and only 6 per cent have obtained permanent or life certificates.

6. The *experience* of teachers in the one-teacher rural schools averages 3.7 years, ranging from the "beginner" to the one having had 55 years of teaching service. The average experience for men teachers is 7 years, and for women teachers 3.2 years. The investigation also showed that the average number of places taught by the entire group is 3, and that 24 per cent taught in from 5 to 20 different schools. The correla-

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tion between the number of places taught and the years of experience was found to be very high, namely r=.79.

The facts concerning the stability of the teaching force for the entire State over a three-year period indicate that in the 10,000 one-teacher schools, 4,100 would have three different teachers, 4,400 one teacher for two years and one teacher for one year, and only 1,500 one teacher over the entire three-year period. This unusually high proportion of instability of the teaching corps should receive the serious and immediate attention of the educational leaders of the State.

In examining the teachers' directories of 18 counties of the State for 1919–20, 30 per cent of the 2,640 teachers in one-teacher schools are "beginners," and 37 per cent of the teachers, while experienced, are now teaching in a new position, making a total of 67 per cent of the one-teacher schools of these counties with either an experienced teacher in a new position or a new teacher without any teaching experience. On the other hand, in the two-teacher schools of the same counties, only 12 per cent are new teachers without any experience and 33 per cent are experienced teachers in a new position. This again demonstrates the tremendous handicap of the one-teacher schools as compared with the other types of schools under county supervision.

On the basis of the facts in this study and of others referred to in this monograph, the schools of Pennsylvania will require each year to meet their needs between 5,000 and 6,000 new teachers. From the fact that normal-school principals tell us that on an average only 15 per cent of their graduating classes enter one-teacher rural schools, it is evident that, on the basis of 2,000 State normal-school graduates, there are only approximately 300 trained teachers available to fill the 3,000 vacancies in one-teacher schools. Surely it is most imperative that additional training facilities as well as a full capacity of the State normal schools now in existence must be provided, or the vacancies throughout the State will necessarily have to be filled with an inadequate and poorly trained teaching force.

7. According to the data for the year 1918–19, the *salaries* of the teachers in one-teacher schools averaged $411, while those of teachers in two and more than two-teacher schools averaged $519. This difference of $109 in salary between the one teacher and two and more than two-teacher schools frequently occurs in the same township under the same board of education, thus specifically indicating the great inequalities in the educational conditions and in teacher standards existing in these types of schools. The median salary of borough teachers in the same counties is $588, which is $69 higher than the median salary, $519, paid to teachers in the two and more than two teacher schools, and $177 higher than the median salary, $411, paid to the teacher in the one-teacher schools. This salary situation explains at least in a large measure the instability of the teaching force among the smaller villages and rural districts.

The length of school term, always a determining factor in explaining teachers' salaries, was found to average in townships 7.6 months, and in boroughs, 8.6 months. The minimum school term of 7 months required by law exists in 58 per cent of the townships, and in only 11 per cent of the boroughs. The significance of these data is that the teachers in the one-teacher schools receive on an average $14 per school month less than the teachers in the two and more than two-teacher schools in the same townships with the same length of school term, and frequently controlled by the same board of education. It would seem that these facts furnish a strong argument in favor of some scheme for equalizing educational standards. This might be brought about by an equitable salary measure for the rural teachers in the one-teacher schools, such as the "bonus" scheme as recognized in the Wisconsin salary law and to some degree in the Woodruff salary bill for Pennsylvania, or by some radical change in the form of unit of administration, such as a county-local unit with more centralized control over local units, or a county unit with a small county board of education. In 75 per cent of the cases school boards pay teachers the minimum salary required by

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law and do not seem to recognize the academic or professional training of teachers either before entering service or while in service. In increasing salaries their main consideration is apparently such mandatory legislation as the kind of certificate held and the minimum salary law. In only 10 per cent of the cases was it reported that school boards considered such factors as experience and efficiency in placing teachers and determining salary schedules.

The correlation between years of experience and salaries of men and women teachers was found to be very low: namely, r=.20 and r=.20, respectively, indicating that teachers receiving, for example, a salary of $420 might have from no experience to 50 years of experience and at the same time teachers with two or three years of experience received salaries from $315 to $700. The fairly low correlation of the number of increases in salary to the number of years of experience offers further proof that experience is practically an insignificant factor.

These findings are a recapitulation or a summary of the outstanding facts concerning the different phases of the status of the rural teachers. It should be kept in mind that it was not primarily the purpose of this survey to offer remedial or constructive measures in the solution of the problems revealed by the investigation but rather to make such observations and suggestions as the evidence safely warrants. It will, however, serve its purpose if the facts and conclusions set forth, and the methods used in establishing their reliability, will help constructively to solve one of the greatest problems in the field of American education—*the problem of the rural school.*

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DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

BULLETIN, 1921, No. 35

THE WORK OF THE BUREAU OF EDUCATION FOR THE NATIVES OF ALASKA

[Advance sheets from Biennial Survey of Education in the United States, 1918–1920]

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THE WORK OF THE BUREAU OF EDUCATION FOR THE NATIVES OF ALASKA.

CONTENTS.—Extent of territory—Supervision—Control of expenditures—Nature of the work—Colony building—Sale of native commodities—Recent epidemics—Transportation—Census of Alaska—Reindeer service.

The work of the Bureau of Education for the natives of Alaska includes the Alaska school service, the Alaska medical service, and the Alaska reindeer service, with a field force in Alaska, in 1920, of 6 superintendents, 133 teachers, 9 physicians, and 13 nurses.

The work is of vast extent, and it is carried on under peculiar difficulties. If Alaska were superimposed on the United States, its northernmost cape would be on the boundary between the United States and Canada, its southeasternmost extremity would touch the Atlantic coast at the State of Georgia, the Aleutian Islands would skirt the Mexican border, and the westernmost of its islands would lie in California. The 67 villages in which the bureau's work is located would fall in 21 different States.

Some of the villages on remote islands or beside the frozen ocean are brought into touch with the outside world only once or twice a year, when visited by a United States Coast Guard steamer on its annual cruise or by the supply vessel sent by the Bureau of Education. Many of the settlements have no regular mail service and can communicate with each other and with the outside world only by occasional passing boats in summer and sleds in winter. During eight months of the year all of the villages in Alaska, with the exception of those on the southern coast, are reached only by trails over the snow-covered land or frozen rivers.

SUPERVISION.

The regulations governing the work of the Bureau of Education in Alaska permit the greatest freedom of action on the part of the local employees that is consistent with the ultimate responsibility of the Commissioner of Education.

The entire work is under the direction of Mr. W. T. Lopp, superintendent of education of natives of Alaska, whose headquarters are in Seattle, which is more readily accessible to all parts of Alaska than is any point within the Territory itself. The Seattle office of

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the Alaska division also functions as a purchasing and disbursing office for the service.

The Territory has been divided into six school districts, each under the immediate supervision and direction of a district superintendent. One of these supervision districts contains fully 100,000 square miles. In visiting the widely separated schools a district superintendent must travel vast distances by sled over the frozen, trackless wilderness; frequently he must risk his life on treacherous, tempestuous waters in a native canoe or small power boat; he must endure the violence of the northern storms, the rigors of the Arctic winter, and the foulness of the native huts in which he must often find shelter.

CONTROL OF EXPENDITURES.

At the beginning of each fiscal year the Commissioner of Education distributes to the purchasing agent in Seattle and to the superintendents, from the appropriation made by Congress for the support of the work, definite sums for the purchase of supplies, furniture, equipment, and fuel; for the payment of rental; for furnishing medical relief to the natives; for the relief of destitute natives, and for the payment of traveling expenses. In like manner, from the authorizations received by them from the Commissioner of Education, the superintendents distribute to the teachers, physicians, and nurses in their districts "subauthorizations" to enable them promptly to make expenditures for local needs. Except in grave emergency, no expenditure is permissible unless it is covered by an authorization or by a subauthorization. By this method of distributing funds each superintendent and teacher is enabled to meet, within the limit of expenditure authorized, every need of the service as it arises. The effectiveness and scope of the work are limited only by the amounts of the appropriations made by Congress.

NATURE OF THE WORK.

The work is carried on for the benefit of adults as well as for children. In the Alaskan native community the school is the center of all activity—social, industrial, and civic. Each schoolhouse is a social center for the accomplishment of practical ends. Many of the buildings contain, in addition to the recitation room, an industrial room, kitchen, quarters for the teacher, and a laundry and baths for the use of the native community. The schoolroom is available for public meetings for the discussion of the affairs of the village or, occasionally, for social purposes. In the schoolroom the endeavor is made to impart to the children such instruction as will enable them to live comfortably and to deal intelligently with those with whom they come in contact; instruction in carpentry, house building, cook-

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ing, and sewing is emphasized. In some sections the natives have been taught to raise vegetables, which provide a healthful addition to their usual diet of fish, meat, or canned goods.

In the villages the teachers and nurses endeavor to establish proper sanitary conditions by inspecting the houses, by insisting upon proper disposal of garbage, and by giving instruction in sanitary methods of living. Natives are encouraged to replace their primitive huts by neat, well-ventilated houses. Cooperative enterprises, financed by native capital and conducted by the natives themselves, are fostered. In many instances the school is the only elevating power in the native community.

Tuberculosis, pneumonia, rheumatism, and venereal diseases prevail to an alarming extent in many of the native villages. In its endeavor to safeguard the health of the natives of Alaska, the Bureau of Education maintains hospitals in five important centers of native population, employs physicians and nurses who devote themselves to medical and sanitary work among the natives in their respective districts, and provides medical supplies and textbooks to the teachers to enable them to treat minor ailments and intelligently to supervise hygienic measures. There are extensive regions in which the services of a physician are not obtainable. Accordingly, it often becomes the duty of a teacher to render first aid to the injured or to care for a patient through the course of a serious illness.

To be "teacher" in the narrow schoolroom sense is the least of the duties of a teacher in the Alaska school service; he is the friend, adviser, and inspirer of the natives in their struggle toward civilization.

COLONY BUILDING.

For the protection of the natives and in order more effectively and economically to reach a larger number of natives than it could in the small, scattered villages, the Bureau of Education has secured the reservation by Executive order of carefully selected tracts in various parts of Alaska to which natives can be attracted and within which they can obtain a plentiful supply of fish and game and conduct their own commercial and industrial enterprises. Residence within these reservations is not compulsory; natives settling on the reservations are in no way hampered in their coming and going, nor is their status in any way changed by residence thereon. The object is to make these reservations so attractive from an economic and social point of view that natives will voluntarily come into them. Within the reservations it is possible to maintain better equipped and more efficient schools than can be provided for smaller villages, and to supervise cooperative stores and industrial enterprises maintained by the natives themselves. The settlements at Hydaburg,

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Noorvik, and Metlakatla are conspicuous successes in colony building.

Hydaburg.—The locations of many of the native villages in southern Alaska were selected in ancient times when intertribal strife made strategic sites desirable. Several of these villages are not advantageously situated with regard to hunting and fishing grounds or for trading purposes. For these reasons there existed among the members of the Hydah tribe in the villages of Klinquan and Howkan a desire to migrate. Taking cognizance of this desire, representatives of the Bureau of Education selected as a site for a new village for the Hydahs a tract on an uninhabited bay on the shore of Prince of Wales Island, with abundant timber, fresh water, and game, and accessible to centers of trade. By Executive order a tract of approximately 12 square miles was reserved for the use of this colony and such of the natives of Alaska as might settle within the limits of the reservation.

In a fleet of canoes the people of Klinquan and Howkan migrated to the new site during September, 1911, taking with them their household goods and movable property. Under the leadership of the teacher, a clearing was made in the primeval forest; the schoolhouse was the first building erected; neat log cabins followed, the Bureau of Education aiding in equipping the sawmill to provide lumber for the new village, to which the natives gave the name Hydaburg.

Under the guidance of the Bureau of Education during the following years the Hydaburg people, only a generation removed from savagery, have turned the dense forest into a thriving, well laid out, electrically lighted, self-governing town, with several miles of planked streets, a modern dock and float landing, a sawmill, a cannery building, church, cooperative store, shingle mill, and lumber yard.

The Hydaburg Trading Co. was organized in November, 1911, to transact the mercantile business of the settlement and to operate the sawmill. When the books were audited 12 months later, $4,020 had been subscribed in stock. On June 30, 1920, the capital stock of the company was $40,000; merchandise inventoried at $20,000. The sales of lumber from February 1 to June 30, 1920, amounted to $6,000. The company owns a store building worth $10,000, a sawmill valued at $9,500, a cannery building and dock at $6,000, a moving-picture outfit, an automobile truck, and equipment for electric lighting.

In 1911 the par value of a share in the Hydaburg Trading Co. was $10. In 1920 the total accumulation on each share, including the stock dividend and the purchase dividend each year, amounted to $244.28. This success is in large measure due to the fact that, through the teacher, the Bureau of Education exercises rigid supervision over

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the transactions and accounts of the company. An accountant from the Seattle office of the Alaska division of the Bureau of Education makes the annual audit.

Noorvik.—With their advancement in civilization the Eskimos living at Deering, on the bleak coast of the Arctic Ocean, craved a new home. Lack of timber compelled them to live in the semiunderground hovels of their ancestors, while the killing off of game animals made it increasingly difficult to obtain food. An uninhabited tract on the bank of the Kobuk River, 15 miles square, abounding in game, fish, and timber, was reserved by Executive order for these Eskimos, and thither they migrated in the summer of 1915. On this tract, within the Arctic Circle, the colonists, under the leadership of the teachers, have built a village, which they have called Noorvik, with well laid-out streets, neat single-family houses, gardens, a mercantile company, a sawmill, an electric-light plant, and a radio station, which keeps them in touch with the outside world.

The Metlakatla Colony.—In 1857 William Duncan, of Yorkshire, England, was sent by the Church Missionary Society, of London, as lay missionary to the Indians near Fort Simpson, British Columbia. In course of time Mr. Duncan raised this tribe from barbarism and founded for them a prosperous village, named Metlakatla, with church, store, sawmill, and cannery. Disagreements with the Church of England on religious matters and with the Canadian Government on the ownership of land caused the natives under Mr. Duncan's guidance to consider migrating to Alaska. During the winter of 1886–87 Mr. Duncan visited Washington and conferred with the President, members of the Cabinet, and other prominent men in regard to the proposed migration. Encouraged by the interest shown by the officials in Washington, almost the entire colony of about 900 migrated in August, 1887, to Annette Island, where they built a new Metlakatla. In 1891 Congress reserved Annette Island, in southern Alaska, for the Metlakatlans and such Alaskan natives as might join them.

In 1891 Mr. Duncan organized the Metlakatla Industrial Co. to carry on the industries of the colony. In 1905 Mr. Duncan repaid to the natives and to the philanthropists the money invested by them, with interest; the company was dissolved, and Mr. Duncan remained in sole control. The operations of the cannery and sawmill were curtailed, and in 1913 they were closed. Lacking employment in Metlakatla many natives left the island, and the colony deteriorated.

The cogency of petitions for the establishment of a United States public school in Metlakatla, and personal investigation of the situation by the governor of Alaska and by the Commissioner of

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Education, resulted in 1913 in the establishment by the Bureau of Education of a school in Metlakatla. The resuscitation of the industries followed.

In 1917 the Secretary of the Interior, on behalf of the Metlakatlans, entered into a five-year lease with the Annette Island Packing Co., of Seattle, granting fish-trap privileges within the reserved waters adjacent to Annette Island, and permission to erect and operate a cannery within the reserve. The returns to the Metlakatlans for fish royalties, trap fees, labor, and for lumber purchased from the local sawmill amounted in 1919 to $90,032.88. It is expected that in 1921 the revenues from the lease will enable the Secretary of the Interior to take over for the Metlakatlans the property of the lessee within the reserve. The Metlakatla Commercial Co., organized by the Bureau of Education, conducts the mercantile business of the settlement and operates the sawmill.

Under regulations issued by the Secretary of the Interior, the local government of the colony is vested in a council of 12, elected annually. The religious affairs are under 12 elders, selected by the people.

SALE OF NATIVE COMMODITIES.

Formerly it was possible for the Eskimos on the shores of Bering Sea and the Arctic Ocean and in other remote regions of Alaska to dispose of their valuable furs, ivory, and whalebone only to the local traders, with the result that the natives usually received low prices for their commodities, and were constantly in debt to the local traders. Availing themselves of the parcel-post service and of the increased opportunities to send freight, many Eskimos who have been educated in the schools now forward packages of fox, lynx, and mink skins, and ivory and whalebone to the office of the Alaska division in Seattle, which, through the Seattle Fur Sales Agency, sells the furs at public auction, in accordance with the rules governing such sales, with the result that many natives are now receiving full value for their goods. The proceeds of all sales are sent to the individual natives, applied to the settlement of their accounts with the Seattle merchants, or placed to their credit in savings banks, as requested; and detailed account is kept of all transactions. The vessel which makes the annual delivery of supplies to settlements along the Arctic coast of Alaska carries many tons of food supplies, packages of clothing, household goods, and building materials, purchased with the proceeds of the sale of furs and other commodities sent out by the natives during the previous summer. All transactions in connection with these sales, purchases, and shipments were originally carried on under the general oversight of the chief of the Alaska division of the Bureau of Education, acting as a private individual. This

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philanthropic action, inaugurated as an emergency measure, has received official sanction by the Department of the Interior and has been made part of the official duties of the chief of the Alaska division, who is under bond for the faithful performance of the same.

RECENT EPIDEMICS.

In October, 1918, following the line of steamship transportation from Seattle, influenza broke out in the coast towns of Alaska and rapidly spread to the interior settlements. Furnishing medical relief to the native races of Alaska is a duty of the Bureau of Education, but in the great emergency created by the epidemic the bureau could not, by itself, effectively cope with the situation. Gov. Riggs, therefore, as executive head of the Territory, accepted the responsibility of directing the fight against the disease and took immediate, energetic, and effective action to check its ravages among the native races of Alaska, as well as among the white people.

The Surgeon General of the Public Health Service authorized Gov. Riggs to employ physicians and nurses and to purchase medicines. As a sufficient number of doctors and nurses could not be had in Alaska, 19 physicians and 3 nurses were secured in the State of Washington and sent to southern Alaska on the naval collier *Brutus*. All of the bureau's physicians, nurses, superintendents, and teachers were placed at the governor's disposal and rendered zealous service in fighting the epidemic in the native villages. White people throughout the Territory cooperated heartily. The assistance of the Red Cross was also secured.

The epidemic was especially severe in the Nome and St. Michael regions, where it resulted in the death of at least 850 natives. Among the victims of the epidemic were Mr. Walter C. Shields, who for many years had been superintendent of the work of the bureau in northwestern Alsaka; Dr. Frank W. Lamb, physician in charge of the bureau's hospital at Akiak; and Mrs. Harriet T. Hansome, assistant teacher at Hydaburg.

In May, 1919, influenza made its appearance among the Eskimos in the Bristol Bay region and among the Aleuts at Unalaska. As in the previous epidemic, vigorous measures were at once taken to combat the disease, the Navy Department sending the *Unalga*, the *Bear*, the *Vicksburg*, and the *Marblehead*, with physicians and nurses, to the stricken districts. In the Bristol Bay region the epidemic caused 440 deaths and in the village of Unalaska 45 deaths. As the result of these epidemics about 250 children were left orphans. In the Nome region it was found possible to distribute the orphans among Eskimo families, but in the Bristol Bay and Cook Inlet districts it was necessary for the bureau to assume their entire care in orphanages which were erected at Kanakanak and Tyonek.

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TRANSPORTATION.

The 67 villages in Alaska in which the work of the Bureau of Education is carried on are scattered along thousands of miles of coast line and on the great rivers. Very many villages are not on the routes of commercial vessels. Some of the settlements can be brought into touch with the outside world only during the short season of open navigation in midsummer. The securing of transportation from Seattle to their remote destinations of teachers, physicians, and nurses, and of the supplies and building materials required in the Alaska school service, the Alaska medical service, and the Alaska reindeer service is an undertaking of great difficulty. The problem was acute during the summer of 1919, transportation to and in Alaska being in a chaotic condition as the result of war conditions and because vessels carrying freight for western and northern Alaska had left Seattle before the passage of the appropriation for the support of the work of the Bureau of Education in Alaska. Even on the established routes rates were excessive and steamers were unable to maintain their time schedules; there were long delays of passengers and freight at transfer points; in several instances expensive emergency transportation of employees and supplies had to be secured. For a long series of years the Coast Guard Service, through its vessels cruising in Alaskan waters, has willingly cooperated with the Bureau of Education, but its vessels are not adapted to the carrying of passengers and freight and they have numerous other duties to perform.

Experience has shown that the work of the Bureau of Education in Alaska can never be administered effectively and economically until the bureau owns and controls its own vessel. Request was therefore made to the Navy Department for a vessel suitable for use by the Bureau of Education in connection with its work in Alaska. Complying with the request, the Navy Department transferred to the Department of the Interior the U. S. S. *Boxer*, a stanch, wooden vessel, with a carrying capacity of about 450 tons, and admirably adapted for the purpose contemplated. The endeavor to secure a congressional appropriation to meet the expenses of refitting the *Boxer* for service in Alaskan waters did not meet with success. The vessel is held at the Naval Training Station, Newport, R. I., pending the securing of an appropriation.

CENSUS OF ALASKA.

The vast extent of the Territory, the remoteness of many of the settlements, and lack of transportation facilities make the taking of the census of Alaska a matter of great difficulty. At the request of the Bureau of the Census, Mr. W. T. Lopp, superintendent of

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education of natives of Alaska, was placed in charge of the entire work of the Alaska census of 1920, with the bureau's superintendents, physicians, and teachers in all parts of the Territory as special agents and enumerators. This cooperative arrangement, while greatly increasing the duties of the bureau's employees during the year, proved to be mutually economical and advantageous.

REINDEER SERVICE.

The greatest work for the natives inhabiting the northern and western parts of Alaska has been the introduction and development of the reindeer industry.

Until 1892 there were no reindeer in Alaska. The industry began in that year with the importation by the Bureau of Education and the Revenue-Cutter Service of 171 reindeer from Siberia, which were bought with funds secured by Dr. Sheldon Jackson from benevolent individuals. The importation continued until 1902; during that period 1,280 reindeer were brought over. There are now approximately 180,000 reindeer in Alaska, distributed throughout the coastal regions from Point Barrow to the Alaska Peninsula. Two-thirds of these reindeer, representing a value of $3,000,000, are the property of the natives.

The raising of reindeer is the form of industrial education best adapted to the Eskimos inhabiting the limitless grazing lands of arctic and subarctic Alaska, and in the early stages of the enterprise the reindeer service became an integral part of the educational system of the Bureau of Education for those regions. The district superintendents of schools are also superintendents of the reindeer service; the teachers in charge of the United States public schools in the regions affected by the reindeer industry are ex officio local superintendents of the reindeer herds in the vicinity of their schools. The reindeer are distributed by a system of apprenticeship, promising and ambitious young natives being selected by each local superintendent as apprentices for a term of four years, receiving at the end of each year the number of reindeer prescribed by the regulations governing the service. Upon the satisfactory termination of his apprenticeship the apprentice becomes a herder and assumes entire charge of his herd, subject to the supervision of the district and local school authorities. In accordance with the regulations, the herder must in turn employ apprentices and distribute reindeer to them, thus becoming an additional factor in the extension of the enterprise. In order to safeguard the reindeer industry for the natives, the regulations forbid the disposal of female reindeer to others than natives of Alaska.

The object of the importation was originally to furnish a source of supply for food and clothing to the Alaskan Eskimos in the vicinity

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of Bering Strait, nomadic hunters and fishermen, eking out a precarious existence upon the rapidly disappearing game animals and fish. Within less than a generation the reindeer industry has advanced through one entire stage of civilization, the Eskimos inhabiting the vast grazing lands from Point Barrow to the Aleutian Islands; it has raised them from the primitive to the pastoral stage; from nomadic hunters to civilized men, having in their herds of reindeer assured support for themselves and opportunity to accumulate wealth.

The magnitude and value of the reindeer industry have resulted in the making by Congress of an appropriation to enable the Bureau of Biological Survey, Department of Agriculture, in cooperation with the Bureau of Education, to make investigations, experiments, and demonstrations for the improvement of the reindeer industry in Alaska. The distribution of reindeer among the natives and the use of the enterprise as the form of industrial education best adapted to the races inhabiting the untimbered regions of Alaska will remain under the supervision of the Bureau of Education.

In making its public schools centers of social, industrial, and civic life in the native villages of Alaska, the Bureau of Education took pioneer action in making an educational agency reach an entire community.

The establishment of the Alaska reindeer service was the earliest governmental action providing, by the introduction of a new industry, practical vocational training, adapted to community needs, guaranteeing assured support, and resulting in training a primitive race into independence and responsible citizenship.

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DEPARTMENT OF THE INTERIOR
U. S. BUREAU OF EDUCATION

BULLETIN, 1921, No. 36

MAJOR PROJECTS IN ELEMENTARY SCHOOLS

By

FLORENCE C. FOX
SPECIALIST IN EDUCATIONAL SYSTEMS
BUREAU OF EDUCATION

WASHINGTON
GOVERNMENT PRINTING OFFICE
1922

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FOREWORD.

How shall a project be organized so that the subjects in the school program shall properly function and shall contribute to the effective working out of the central idea around which the project must concentrate? How shall an untrained teacher be able to formulate her subject matter in terms of projects unless she understands the function of each subject?

An attempt is made in the first chapter of this bulletin to outline the proper function of each subject "according to its relative and absolute educative value" and to indicate what the child's natural reaction to this material becomes in his educative process when it is organized in terms of projects. The second chapter deals specifically with a series of projects which have been worked out in several elementary schools according to the fundamental principles laid down in Chapter I.

But one type of project is considered in this discussion, the major project, which, in educational parlance, has come to mean a unit of study around which the work of the school shall center for a given length of time and shall include all the activities of the school during that period. Such a study creates a demand for reading, writing, language, and number, and presents many opportunities for the use of drawing, modeling, making, and sand-table building. It provides for contracts and cross connections between all the subjects of study and presents a vital, integral unit for the work of the school. The minor project deals with some lesser question which may grow out of the major project or which may be suggested in the assignment of the daily recitation. It is more individual in character than the major project and often is little more than a related problem in a subject of study.

A distinction is readily made in this connection between a project which deals with a real situation in the child's experience and the act of playing through such an experience in the schoolroom. The first is based upon the child's direct contact with some activity in his immediate environment from which he gains those impressions that are used as a basis for study and for reproduction. The play project may come to him through the medium of actual experience, but it is developed and carried on in the realm of imagination and supposition.

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MAJOR PROJECTS IN ELEMENTARY SCHOOLS.[1]

Chapter I.

THE ORGANIZATION OF SUBJECT MATTER IN TERMS OF PROJECTS.

Elementary teachers hear much to-day regarding the child's interests and experiences as bases of their work. Just what does this mean, the child's experiences, and how may they become the dominating idea in elementary education? What are the child's interests and experiences? What are they before he enters school, what are they now with his added school experience increasing day by day, and what are they destined to become as we look toward the future through the next year, and the next, and for many years to come? A great educator has said: The child's home is of paramount interest to him; he is interested in the brute life about him; he loves the flowers; the passing of the seasons and the changing phases of nature affect him; pebbles and stones; the forces of nature, wind and rain and heat and cold; growth of plants in garden and field—all these come within the realm of his daily observation and experience.

These interests and experiences have been classified in the outline given below as central subjects and include science, geography, civics, history, and literature. Here within these central subjects lies our opportunity for educative material upon which to base our projects. Anything less than these is unworthy. The method of presentation is suggested by the remaining sections of the outline. Impressions are received by the child through the modes of attention: Observation, hearing language, and reading. These impressions are reproduced by him through the modes of expression: Gesture, music, making, modeling, painting, drawing, speech, and writing. Finally these impressions are made definite and real to the child through the modes of judgment: Form and number; their adequacy depends upon his ability to visualize the elements of form and proportion in his mental picture.

Organization of subject matter.

	I. Central subjects.	II. Modes of attention.	III. Modes of expression.	IV. Modes of judgment.
The child's relation to..	Science. Geography. Civics. History. Literature.	Observation. Hearing language. Reading.	Gesture. Music. Making. Modeling. Painting. Drawing. Speech. Oral reading. Writing.	Form. Number.

I. The central subjects representing the child's interests and experiences.
II. The modes of attention through which the child receives his impressions of the central subjects.
III. The modes of expression by which the child reproduces his impressions of the central subjects.
IV. The modes of judgment by which the child measures his impressions of the central subjects.

[1] Elementary schools in this bulletin refer to the first six grades.

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Here we have concentration and the unification of thought and expression. "Each subject, means, mode, and method finds its absolute and relative educational value, its definite place in conditions for self-activity and self-effort." No teacher can wander far afield with a classification of this kind in her mind when she essays to organize her subject matter into units of study and to use the project method as a basis of her work.

But unless she does build around a central subject, unless she knows that silent reading is a mode of attention and not a subject of study, unless she realizes that oral reading is a form of speech, a mode of expression, not a subject of study; unless, in other words, her subject matter functions "according to its relative and absolute educative values," she will find her project falling about her ears like a house of cards and she will return to the beaten paths with which she is familiar and will continue to hinder the spontaneous growth of the child by misusing and perverting the educative function of the subjects in her daily program.

Here, then, is a measure by which to guage the educative process and upon which to build our schoolroom procedure. Great minds have contributed to this organization of subject matter—Herbart, Froebel, our own educational reformer, Col. Parker, and many others. It remained for Col. Parker to take the best from this system of educational philosophy and to found a school in which the theory might be tried and tested by actual schoolroom practice. For 20 years it has been successfully practiced in many schools in this country. Just now it is receiving a new impetus, and fortunate are the children who are entering school next year that recognition is more and more being given to the greatest educational movement of our times. That it requires study and preparation on the part of the teacher and that its limits are expressed by her education, training, and a professional perspicuity there is no doubt. If we wish to carry on this great movement, we must understand the child's attitude toward the life about him and in what particular way the environment that surrounds him can be made to function in his education.

THE FUNCTION OF SUBJECT MATTER "ACCORDING TO ITS RELATIVE AND ABSOLUTE EDUCATIVE VALUE"—SOURCES OF IMPRESSION.

I. Central Subjects.

SCIENCE, GEOGRAPHY, CIVICS, HISTORY, AND LITERATURE.

SCIENCE.

Field excursions and experiments.—The lesson in science usually takes the form of nature observations in the early grades and is developed from the child's unconscious observation out of school. Later these lessons are based upon his more conscious study of nature on a field trip or from specimens brought into school rooms for study or enjoyment. All of the interests and experiences which these contacts arouse should be considered by the teacher in her search for centers of study and for themes upon which to base her projects.

Excursions in the field and experiments in the schoolroom should form a large part of the plan for these lessons. The experiment often supplements the experience gained in the field and clarifies the somewhat vague and in-

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definite impressions which are apt to result from an excursion. It coordinates and conserves the experience and helps the pupil to form a definite, tangible premise upon which to build a future inference or conclusion. The value of a field excursion may be increased, in the middle grades particularly, if the class is prepared for a definite line of observation, with the teacher close at hand to direct and participate in the investigations. Some of this period, undoubtedly, should be free for the exercise of individual and group interests, perhaps wholly unrelated to the class experience, and these may develop later into valuable material upon which to base an individual or a group project.

The garden.—In the making of a garden there are many opportunities for lessons in science and geography. It opens a way for field lessons in which to collect specimens of soils and to conduct a series of experiments which shall determine their power to retain moisture and their capillarity, leading out to the practical questions of irrigation and dry farming. It calls for visits to different garden plots in the vicinity, on high ground and on lower levels, and for walks in the country where systems of drainage have redeemed the swampy land and prepared it for cultivation.

Then there are kindred subjects related to the garden. How many and how vital they are: Bird boxes in the garden; What to do with the English sparrow; How is this little savage of bird life responsible for the depredations of the Tussock moth? The household cat and his relation to the fruit trees in the garden; The economic value of the American toad; and so on through many phases of these natural phenomena.

Pertinent questions, logical reasoning, enthusiastic responses, cooperation, and sympathy are some of the values of these lessons. Much more than garden making and plant study are developed. Ideals of usefulness, of thrift, and of industry are unconsciously absorbed which shall fix irrevocably a higher standard of living.

Mechanics.—In the middle grades the problems of construction begin to assume an interest in the child's life. Out of these interests many individual projects may be developed with the aid of materials like the Erector models, construction blocks, and Meccano parts to supplement the observations made during the field lessons. Automobile construction is close to the child's experience, and how to change a tire is one of the most practical problems he can master in these days of horseless carriages. Farm machinery, the tractor, harvester, reaper, and binder; the building of houses, with their problems of heating, lighting, plumbing, and ventilation, offer subjects of absorbing interest in mechanics, electrical appliances, and sanitation to children in these grades. The bridge which the child crosses on his way to school, the railroad track under the bridge, and the engine passing and repassing at his feet stimulate him to inquiry, and research, and experimentation.

Lessons on food and clothing, which include subjects like cotton and wool, wheat and milk, lead out into a study of the problems involved in the manufacture of textiles, and the principals of mechanics which are utilized in the steam-roller processes in our large flouring mills. The study of farm animals and agriculture begun in the lower grades logically follow. Milk offers a wide field of study through lessons in modern methods of dairying, the construction of silos and dairy barns, of motor churns, cream separators, and cheese presses. The sterilization of dairy utensils and the process of milk pasteurization, as lessons in chemistry, bear the closest relation to the child's health and well-being, and may be woven into our plans for projects as we look for subjects in science which hold an absorbing interest for the child.

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GEOGRAPHY.

The child's immediate environment is the right material for his projects in early geography lessons. This subject goes hand in hand with science and shares with it the opportunity for study which every field trip and every excursion provides. Each locality possesses some interest which offers possibilities to the teacher for organizing her project. It may be a river which opens up a wide choice of related subjects, a mountain or a plain, a product of especial value to the community as an article of commerce or of manufacture, or a landmark which holds some special significance in local history.

Maps are wholly outside the question in this early work, and are, at best, but diagrams upon which to base a conception of size and shape and location. They have little to do with the real subject and often produce an erroneous impression which may cling to the child through all his later life. He should learn to know his town through his contact with its life. He should be led to think of his State as he thinks of a beautiful landscape, situated in the East or West, the North or South, with a wonderful diversity of mountain or plain, rich in natural products, watered by many rivers, abounding in fertile farms and prosperous cities. This should be his ultimate impression, his own State merging into one continuous panorama, without artificial barriers and boundaries of line and color, which, alas, he all too often remembers from the maps he sees upon the blackboard or in his textbook.

CIVICS.

Reports of the child's observations of his own house, its color, size, and general appearance; of the different rooms in his house, the furniture in each, and its specific purpose offer excellent material for these units of study.

The family life which surrounds the child, the different members of the family, and their relation to him are close to his interest and experience. Discussions in the schoolroom of the child's home activities, setting the table, washing and wiping the dishes, making the beds, and the best ways and the necessity for performing these homely tasks will lift them above the plane of drudgery they so often occupy in the child's mind, and will afford, at the same time, a most opportune occasion for early lessons in civics.

Later his interests extend out into the town in which he lives and his participation in its life and history: The material construction, location, plan, streets, and buildings; the personal needs, food, shelter, and clothing; the professional contacts, the employer, the teacher, the doctor, and the preacher; the social experiences, recreation and intercourse, and the ethical significance of the government of the town. Finally, it leads him out into the world of foreign peoples with their typical manners and customs, and through comparisons and contrasts in this study he forms his ultimate standards.

Throughout this series of problems the civic interest and the history interest are coincident, they merge and blend, they sustain and supplement each the other.

HISTORY.

Back of every project in history should lie our ultimate purpose—to instill in the minds of our pupils the great principles of democracy, upon which our Republic rests. The detailed study of manners and customs in the lives of primitive peoples seems to be the logical starting point for history lessons in the primary grades. Our early settlements in portions of the New World offer to

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the children a richness of material for history stories which no other record of daring and adventure can surpass.

American history is filled with material for lessons in Americanism and the principles of free government. It possesses, more than most, the dramatic and picturesque background so appealing to little children. Its stories of primitive life depicted in the early chronicles hold a compelling interest for primary pupils. Extreme contrasts afford a most artistic element in these narratives—Puritan asceticism as contrasted with Indian barbarism, the kerchief and cap with the feathered headdress and war paint; log cabin with wigwam, and all the homely virtues intensified in a land of wanton practices. Our heroes of exploration, the swashbuckler and priest, French commandant and emigré, fur trader and Spanish grandee, fill the pages of our history with tales of fortitude and courage. Washington and Lincoln, a home of wealth and culture, and a home of poverty and privation, each contributing to the Nation's greatest need, one a "father" and one a "savior" of his country—where in the annals of another country might we find a record so convincing with which to teach the principles of our democracy?

We shall be emphasizing pageants, plays, and festivals during the coming years as a part of our effort to imbue our children with the spirit of democracy. These will abound in symbolism of national ideals, with national events and national progress. We shall learn to sing our national hymns, to recite our national odes, and to salute our flag with a reverent and a contrite heart, realizing that we, as elementary-school teachers, must sow the seed of patriotism in the early years and trust to those beyond us in the work to sustain and encourage its growth.

LITERATURE.

Literature illustrates and beautifies the subjects of study. It is like an accompaniment played upon an instrument during an interpretative recital. For the children it interprets the various phases of nature and enlivens the facts of history. It should be woven into every project as a complement to the study of the central subjects, unless, indeed, it becomes itself a unit of study.

The myth is the beginning of science and history and is closely allied to the early study of those subjects. The cumulative and repetition stories in folklore are the beginning of civics and introduce these early lessons in human relationships through word pictures of concrete and vivid situations. The fable is the beginning of ethics and subtly paves the way for training in right conduct. These stories offer the best opportunities for studies in literature. They carry the child outside himself into a world of imagination and fancy. They build upon the known element in his everyday experience and idealize and enlarge those experiences.

American literature abounds in choicest specimens of English composition which bear a message of national import. We are unusually fortunate in our poets who have contributed largely to the sum of American literature for children. The modern fairy tale is not so good, and should not be used as a substitute for the old classic story which teaches the truth in a better manner. Care should be taken to apply the universal truth embedded in the old Greek and Norse mythology to the child's present-day environment, else the intrinsic value of a study of this literature will be lost.

Tool subjects and content subjects.—Literature and language are so closely associated in the primary grades that the consideration of one involves a discussion of the other. They differ widely in their function, however, for

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language is a tool subject, a mode of expression, while literature is a content subject, which in the form of story-hearing by the pupil becomes a mode of attention.

The telling of a story as a unit or a single piece of literature involves the organization of the story into parts which must follow each other in logical sequence, the play of the imagination over the details of the story, the clear visualization of the setting of the story, and the action which takes place, and the training of the body to respond, naturally and simply, to the emotions which the story may arouse.

Later, readings in literature should be made for the gratification they afford and for the study of human life which they offer, without thought of analysis or dissertation. "Everywhere have I sought peace," says the blessed Thomas à Kempis, "and have found it nowhere, save in a corner with a book," which most aptly expresses what our ultimate use of literature should become.

II. Modes of Attention.

OBSERVATION, HEARING LANGUAGE, SILENT READING.

OBSERVATION.

Without doubt, observation plays the most important part in our acts of attention. Emphasis has already been placed on observation as a means of study in science and geography. It is the primitive, universal mode and should be cultivated in early grades to the extreme of its possibilities.

His training in a close and accurate observation cultivates the child's visual memory, upon which depends all the mental pictures which he creates in the realm of fancy and imagination. This is the fundamental principle upon which the child's education depends: His ability to form vivid mental pictures from his acts of attention and his ability to create out of these other images in the field of constructive imagination.

The teacher's task is not only to present the necessary stimuli, but to train the children under her care in the cultivation of mental imagery. The modes of expression which are given in the next few pages are important means in this training.

HEARING LANGUAGE.

Hearing language is a more difficult mode of attention to master, since it deals with symbols and the child loses the direct contact he enjoys in observation. But a trained ear is quite as important as a trained eye. This is true in language training, because it is through the sounds of language that the interpretation of meanings are secured. Many critics believe that silent reading depends upon the auditory image for its functioning. All authorities agree that the ear is the important organ to be considered in teaching little children to speak, to read, and write. "Address the ear principally," Gouin exhorts the teacher of language, "afterwards take as auxiliaries the eye and hand in reading and writing." Huey agrees that "the ear, and not the eye, is the arbiter of speech; the mouth, not the pen, its greatest instrument."

Naturally the story is the usual medium through which to reach and hold the child's attention in the primary grades. Later narrative, exposition, and oral reading play a large part in the act of hearing language. Caution is needed here against the use of oral reading as an act of attention in the lower grades. Children receive very little of content through this subject at this time. Their

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acts of attention in oral reading usually are focussed on forms and symbols, and their souls are harassed and troubled by difficulties present and unknown dangers to come.

Skill in telling stories to little children should be as much a part of the teacher's equipment as a knowledge of good literature and discrimination in its selection should be. All the art of story telling which she covets for her pupils the teacher should herself possess a hundredfold. Nor does her responsibility end with the telling of the story, for a very definite consideration of its movement from one point of action to another will assist the children to organize its parts into a logical, literary whole, and will train them in that priceless accomplishment—the ability to form vivid images from hearing word pictures.

SILENT READING.

Reading is the third and last mode of attention, and silent reading becomes in later grades the almost universal one in the study of the central subjects. For that reason it should occupy a larger place in the early grades curricula than is now accorded it. Upon it depends the child's power to study and read intelligently through all his later life.

It is needless to say in this connection that of all the subjects in the course of study which lose their function in the hands of the average teacher the subject of reading suffers most. In nearly all schools it is taught as a subject of study through formal drills in technique. Oral reading, which is a form of speech and whose function is expression, degenerates into exercises on the pronunciation of words. Silent reading, which is a mode of attention, is neglected in the first grades until the pupils lose their power to use it in the upper grades according to its function as a mode of attention.

How to cultivate the silent-reading habit.—A reading room for pupils in elementary grades should be set aside in every elementary-school building. It should be furnished much as the children's rooms in public libraries are furnished. Low book shelves should line the walls, filled with books of many kinds; books for tiny children still reading from the pictures in a book and too little yet for texts; shelves of children's classics chosen from Kipling's storehouse, from Carroll, Baldwin, and Scudder, from Perrault and Æsop and from Mother Goose, and just as many as possible of the beautiful readers which the schoolbook publishing houses are bringing out in de luxe editions. These should be arranged not more than 4 feet from the floor, within easy reach of every child in the school.

This withdrawing room would provide for the children an opportunity for silent reading which the ordinary overcrowded assembly rooms do not now afford. Until the children are able to read they will enjoy looking through the books and inspecting the pictures. No seat work was ever devised that can be compared, either in its appeal or in its educational value, to a number of good books conned over and enjoyed by a child in these grades. As an aid in training the child's critical sense in good language forms it has no equal.

How to stimulate interest.—The reading interests of a group of children may be utilized in various ways. The reports in class on selections read, and exchange of books between pupils, with discussions of the pictures, the story, and the characters, will pave the way to a later interest in library reading.

Library reading.—One hour each week, at least, should be spent by the primary grades in a library with their grade teacher. Picture books and reading books should be inspected by the children, questions asked and answered, and encouragement given to each child to draw out a book and take it home to read,

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if possible, or to hear it read by one of the family. The library habit should be cultivated early, as soon as children are interested. This may not be feasible in schools where libraries are some distance from the school building, but even a field trip on the street car or a long walk with the library building as the objective will amply repay the effort made to reach it. The library atmosphere is unique and can be experienced only by personal visits. It is one of the best of the higher influences which touch the child and should be formed early to insure permanency.

III. Modes of Expression.

GESTURE, MUSIC, MAKING, MODELING, PAINTING, DRAWING, SPEECH, AND WRITING.

Some modes of expression are peculiarly appropriate for one subject and some for another, depending upon the type of lesson, the teacher's convenience, her class of children, and the materials she may have at hand.

To visualize, to discuss and relate, and to reproduce is the orderly sequence of reproduction in any subject; to call up the mental picture and then to describe it through the media of the various modes of expression; by oral language, graphic art, gesture, and later by written language; by whatever mode is most appropriate.

To visualize is the essential, fundamental principle upon which this training rests. "I believe that the image is the great instrument of instruction," says Dewey in his Pedagogical Creed. "What a child gets out of any subject presented to him is simply the images which he himself forms with regard to it." The teacher's part in this study is not to instruct but to help the child to form his image and to suggest and provide a suitable medium through which he may express that image.

GESTURE (INCLUDING POSING AND DRAMATIZATION).

Any form of gesture is a mode of expression and is essentially an art subject. It has to do with emotion, thought, and feeling. Grace and dignity of carriage, poise and freedom from self-consciousness are some of the finer qualities which this mode of expression develops.

Posing and dramatization.—Posing is the mode of expression which emphasizes motion and should precede the dramatization of a story. It is used most frequently to impersonate a character in some characteristic pose. Many children who have difficulty in acting can take the pose of a character. Diffident children will be able to take part in this simpler form of action.

Dramatization emphasizes action and is used in reproducing a story or an incident in history or literature which has a decided dramatic quality and is characterized by action. Much of the value of this mode of expression lies in the opportunity it affords for initiative and resourcefulness. The children should be as free as possible during this period. After a leader has been selected he should be held responsible for the presentation of the play. He should assign the different parts and instruct the characters. If his efforts fail another leader should make an attempt to organize the story into dramatic form and to present it before the school. "Hands off" should be the teacher's slogan if she desires to cultivate initiative in her pupils. A pantomime may be organized by a group of children outside the classroom, and after presentation the class may guess the name of the story that has been dramatized.

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MUSIC.

Music should receive the same treatment in the primary grades as that accorded the other modes of expression—an avoidance of technique until the children are quite proficient in singing the beautiful songs prepared by our best composers of music for little children. Rote songs should accompany the lessons in science, in history, and in literature as a mode of expression. The study of symbols should be deferred until the third or fourth grades, at least. Emphasis in all grades should be placed upon music as a mode of expression rather than a subject of study.

MAKING (INCLUDING SAND-TABLE BUILDING).

There is no mode of expression more valuable than that of making. It represents the object more adequately than any other, because length, breadth, and thickness can be expressed by it and it reproduces the object in the same or similar material. It leads to a study of form, of size, and of proportion in all the dimensions. More important still, the children's interest is held by it indefinitely, and their enthusiasm as well.

Building on the sand table.—The representation of regional projects in miniature on the sand table has many educational assets and some liabilities. This treatment is used largely in primary grades to make concrete the impressions which the children are receiving in some unit of study, like the farm, the town, or the setting of a story. It has a direct bearing on the problem of visualization and helps to clarify the mental image. But the child must be led out from his models on the sand table into a sense of reality and on into the field of constructive imagination. Unless this is done his image ceases to grow and he will forever after see the tiny models on a sand table when he wishes to recall some typical setting in a history or geography lesson.

MODELING.

Clay modeling emphasizes form and substance and represents the object in bulk which may be expressed through the clay or plastocene medium. It also possesses an unusual value because a compelling motive lies back of the work. The content of the picture is in the child's mind when modeling is used as a mode of expression and not a representation of the form only.

PAINTING (INCLUDING PAINTING A LANDSCAPE).

Painting emphasizes form and color and is important as a means of cultivating the child's sense of color. Painting with water colors is a difficult mode for little children, because the wash of color must be kept within the outline of the object. If the outline is cut out before the object is painted it will not limit the stroke of the brush, and when it is finished it may be pasted on an appropriate background.

Painting a landscape.—Colored-poster effects to illustrate a story in history or literature may be prepared through this medium in the form of a landscape in water colors for the background of the picture, with the painted objects pasted in their appropriate places on the picture. The wash of color for the background should be made with a sideward stroke of the brush from right to left, the upper half of the picture in blue for the sky and the lower half in an appropriate color for the different seasons of the year—green for the spring and summer landscape, brown for the fall, and dull gray for the winter. Hills or level country are represented by the sky line, which is drawn in lightly with a pencil before the painting is done. Trees and other painted objects may be pasted into the picture to represent any type of landscape that is desired.

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DRAWING (INCLUDING BLACKBOARD DRAWING).

Outline drawing has little to recommend it as a mode of expression in the elementary schools. It requires painstaking effort on the part of the pupil and results in a hard, inflexible line which poorly represents the outline of any object.

Blackboard drawing.—Drawing on the blackboard, or chalk modeling as it is usually called, emphasizes the environment or background of the child's picture and is the best medium for the early work in drawing. If the children are encouraged to draw freely from the first day of school they will have no fear of what to an untrained teacher is a difficult task. Children draw as naturally as they make a gesture and much more naturally than they talk when the reproduction of a story is involved. "I can not tell it, but I can draw it," is often said by children who have had this training, or whose natural aptitude for drawing has been encouraged and developed.

Chalk modeling at the board consists of long, sweeping, downward strokes with the side of the chalk for the vertical objects in a landscape, like the trunks of trees; side strokes from left to right for rolling country; and slanting strokes for hills and mountains—a type of reproduction which is extremely simple for little children. The drawings are crude at first, but they gradually assume correctness of form and proportion under the kindly guidance of the teacher. This method also gives full play to the free arm movement so essential to good penmanship in later grades and is an invaluable training in graphic expression.

Cutting.—Cutting the outline with paper and shears is a more satisfactory medium than drawing with a pencil, in early work especially. It brings the outline to the child in a tangible form, so that the eye is reenforced by the sense of touch when the outline is cut away from its background. The medium seems to be a simpler one than pencil and paper so far as the child's control is concerned. Its chief criticism lies in the fact that the child's training in this mode of expression does not carry over into his later work in art and expression.

SPEECH.

The project offers unlimited opportunity and material for the exercise of oral language. Every lesson in science and geography, in civics, history, and literature is approached through this mode of expression. Conversations, questions, and discussions stimulate the children's interest in these subjects and provide occasion for the use of oral language.

Upon this mode of expression all other modes are based. The other language subjects—reading, writing, spelling, and phonics—are closely connected with it, and the appropriate correlation which exists between oral language and the manual arts as modes of expression should be emphasized by the teacher as she trains her pupils in their use.

Oral reading lessons.—Development lessons in written language and oral reading should grow out of each lesson which is given in the subjects of study. There is no better way of teaching reading than this. The teacher stands before her class, chalk in hand, near the blackboard, and as the pupils formulate their sentences she writes them on the board, later to be typed and bound into reading books.

This exercise offers opportunity for discussions of good language forms, of logical sequence in events, and of clear and concise statements. Two elements should be in the teacher's mind—a limited vocabulary and the need of

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much repetition. This step from oral language to written forms is made without difficulty in these exercises because the sentences are of the children's authorship and are based upon their own experiences.

Auditorium periods.—The lack of opportunity for oral language is the most noticeable defect in the elementary-school program. Individual pupils in the first grades throughout the country speak less than 100 words during a five-hour session of school, including all their responses in the recitation periods of the fundamental subjects. They talk on an average less than half a minute during the school day; and this opportunity is not appreciably greater in the middle grades.

It is one of the best signs of the times that get-together exercises are becoming more and more a feature in the daily school program. Here is a compelling motive for exercises in oral expression and those modes most closely related to it. Once a week at least the elementary school should come together for an hour of music and literary exercises, and for reports on civic interests and nature observations. The Francis W. Parker School in its Yearbook on Morning Exercises, sums up the values of this period in its school in the following words:

> It is evident that the exercises grew out of the daily work of the school or out of the interests of the children in some large, absorbing outside question. The subject is sometimes science, the telling or illustrating of nature observations; the story of some visit to the farm, the art gallery, or workshop; history, current events; the massing of the literature and music of some special subject or special day; the telling of stories that delight the children's hearts; or the discussion of some problem of vital significance in the community school. Therefore the exercises instead of interfering with the school work, emphasize, reinforce, and vitalize it; give it purpose and form and furnish the best test of the children's growth and power to think and of their skill in expression.

A distinct motive lies behind the use of oral language as a mode of expression in the auditorium period. Artificial and unnatural attitudes toward this exercise are fostered if the child is asked to stand before the class and repeat, time after time, a story with which the class is already familiar. He is being trained and he is conscious of it and usually resents it; at the least it tends to make him self-conscious and robs the exercise of all spontaneity and pleasure.

WRITING.

Writing, a mode of expression.—Writing is not a subject of study. It is a mode of expression and should be taught as such. The child should spring to the board under the impulse of an idea and attempt to express that idea in writing. It may be only an isolated word that is emphasized in the reading lesson, it may be a phrase or a short sentence, and the writing of it will be crude at first and scarcely legible, but in a few days the words shape themselves into readable form, and the child has mastered the first step in written language.

The first demand, usually, that meets the child when he enters school is to write his name on the board to mark his place, at his seat to mark his papers, on his material, boxes of paints and crayons, of pencils, of words and letters to be used in reading, that he may distinguish them as his own. As he becomes more proficient he labels this material and the furniture and apparatus which he uses. In scores kept in the games he plays, in street signs in his playtown, or names and prices of foods in his playstore, in numberless activities these demands grow from day to day and are the real incentive for teaching him to write, that writing may become a useful tool to assist him in his work, rather than a long deferred accomplishment gained through weeks and months of formal drills in penmanship.

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IV. Modes of Judgment.

FORM AND NUMBER.

Form and color.—A significant feature of the Binet tests, as they are formulated and used in the first grade in the Detroit public schools, is the emphasis which is placed upon judgment of form as a criterion of the child's mental ability. "Which is the prettiest?" is asked regarding the pictures in outline drawing of three birds—the owl, canary, and parrot. Three horses, three dogs, and three fishes are presented in the same way. "Show me another window like this, make the second picture look like this; what is lacking in this picture?" are questions in this test which are evidence of the high value placed upon the child's critical faculty in the matter of form as a measure of his intelligence.

Color is so closely allied to form that one is never absent from the other. For that reason color should receive a greater emphasis than is now given it in early education. So many black and white prints are used to enhance the pupil's mental picture, so many descriptions are given him which are devoid of the color element, and he is so often allowed to reproduce an impression filled with color through a neutral medium, that his image must become a dull and drab affair in our efforts to educate him.

Much emphasis is purposely placed upon the color feature in the projects reported in this bulletin because of its paramount importance as an attribute of form in the training of a child's acts of judgment. Its esthetic value is immeasurable. A beautiful landscape or a tiny flower fills the child's soul with ecstacy. Often the blend of color is all the child sees in his nature observations, while the appreciation of graceful line comes to him later. Consciously or unconsciously the color which surrounds him has its subtle effect upon his character and should be given a large place in the teacher's plans for her projects.

Number.—Number includes size and proportion as elements in the child's mental image, and his judgment regarding these should be carefully trained from the earliest days of school.

The use of number should be emphasized and its relation to other subjects developed. The child should build up within his consciousness a number sense by using it as a unit of measurement. The length of inch and foot and yard should become familiar to him. He should know the size of pint and quart and gallon, and be able to roughly estimate the difference in weight between pounds and ounces. His judgment of distances, of yards and rods and miles, should be trained to approximate accuracy. He should use his hands and feet in verifying his judgment, measuring with tape and ruler and pacing off the greater distances. He should be able to read a thermometer and tell the time of day on the clock face. The days of the week, the months in a year, and the ever-changing seasons should enter into his understanding. Provision for this training in the judgment of size and proportion, of length and breadth, and thickness, of weight and volume, of degrees in heat and cold, of duration of time, must be made in our organization of projects if we wish the subject of number to function properly.

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Chapter II.

A SERIES OF PROJECTS IN CIVICS, HISTORY, AND LITERATURE.

INTRODUCTION.

The projects which are reported in this bulletin have been worked out in every instance with the participation of the author. They have a many-sided value for the teachers and pupils in the elementary grades. Projects of this kind have become a power in ethical training; they motivate the work of the school along the line of altruism, and unify the interests and vitalize the activities within the schoolroom wherever they are used. It would be impossible in recitations of this kind to "separate the information lessons from their social bearings," and the "acquisition of modes of skill from their relation to the social uses to which they may be put."

Something more than educational conventions should interest us as elementary school teachers. Something more than the three R's should be required of us. Accumulation of information? Yes, but closely connected with the activities of life. Acquisition of the modes of skill? Yes, but with the realization of their social uses. Broader than the schoolroom and wider than the schoolyard must be our platform. It must include the town and the country, the home, the shop, and the store, and all that makes up the child's environment.

REORGANIZATION OF WORK IN A MILL VILLAGE SCHOOL INTO A SERIES OF PROJECTS.

One of the most recent studies of community life in the project form is that reported from the school in a cotton-mill village in a southern State. Every grade in the school had some part in this study of home environment. Each child contributed his quota to the general fund of interest and experience which formed a basis for this study and acquired proficiency in the expression of some phase of it.

A Survey of the Field.

The month of April in North Carolina is a season long to be remembered by a visitor from the Northern States. Especially is this true of one of the model mill villages there. The woods beyond the village are showing a profusion of coloring not found in many localities. From the faintest green of the early leaf to the darkest bough of the pine tree they stretch away before us in every shade of blue and yellow, while underneath the branches the snow-white blossoms of the dogwood gleam through the shadows, and the purple Judas tree adds a brilliant dash of crimson to the panorama of the springtime.

In the foreground of the picture lies the village. Its orderly rows of houses, in gray and brown and ocher, flank the broad, white streets with their concrete curbstones. At one end of the principal street stands the church, and near it

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are grouped the community store, the teachers' cottage, and the two little red brick schoolhouses, giving a pleasing contrast to the neutral tone of the cottages.

At the other end of this street stretches the long, red cotton mill, the center and motive of all the activities of this community. Here the skillful men and women and the busy boys and girls of the village work through the days and nights to keep the flying shuttles and the whirling spindles in motion.

Out beyond the mill, on the edge of the woods, is the dairy, with its stalls for the cows, its milking room, cooling and bottling room, and cleansing and airing apparatus for sterilizing the utensils. Here is the dairy yard, drained and tiled, with a concrete drinking basin, a pasture sown to grass for the summer feeding, and all the latest contrivances used to safeguard the milk supply of the community.

Not far away the piggery has just been constructed in the form of a hollow square with pens opening on the outside for the food supply, and on the inside to allow access to the court, which is also drained and tiled like the dairy yard and supplied with a concrete wallow in addition to its drinking basin. Nearly every family in the community is represented in the piggery. The garbage from the table of the household is collected and fed to the family pig in the piggery, and returns after a few months in the form of pork, ham, and bacon.

The outlying fields have been plowed and fertilized and cultivated, and here the community gardens will be planted, while at the rear of every bungalow a garden plot is ready for the sowing of vegetable seeds and the planting of sets from the community hothouse.

Just outside the windows of the schoolroom, where the children are busy with their books, the hothouse stands, filled with boxes of sprouting seeds, and in the yard adjoining long rows of cold frames display their beds of tiny plants all ready for transplanting to the neighboring gardens.

In the basement of the school is the gardener's office, supplied with seeds of every variety and tools of every description for planting and cultivating a garden.

Across the road from the school workmen are draining one of the village lots, preparing it for the school garden. A small brick catch basin with an iron grill-work cover receives the water and insures the best of drainage conditions. The land has been plowed and harrowed and made ready for the children. Garden walks, 3 feet wide, cross and recross this open lot and divide it into small, rectangular beds which will be apportioned to the pupils in the school for their individual care and cultivation.

The child's relation to this environment.—Many times a day the children in this community pass and repass the gardener's office, the cold frames, and the hothouse. They see the men at work in the fields getting ready for the spring planting and nearer by the preparation for their own school garden.

They visit the piggery and feed their own little pig, who puts his wiggling snout through the opening in his pen and incessantly squeals for more.

They loiter by the dairy and watch the cows standing all day in the dairy yard, chewing their cuds, and waiting patiently for their feeding time. They can tell you that the small dun-colored Swiss gives 6 gallons of milk per day; that the two deer-eyed Jerseys are a little short on milk but long on cream and butter; and that the Alderneys are to be replaced by the Ayrshires.

They carry dinners back and forth from their homes to the mill, and many of them have already become familiar with the tasks which will fall to their lot when they enter into their apprenticeship there.

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They understand the full significance of the late war in its effect on the output of the mill. From their standpoint a war contract means shorter hours in the mill and higher wages. It means additional luxuries for all the family, better clothes and food and longer week-end holidays.

They are already familiar with the processes involved in the making of cotton cloth. They have seen the bales of cotton coming into the mill, the cleaning, the combing, the lapping processes through which the cotton fiber passes on its way to the spinning room.

They have seen their fathers and mothers, older sisters and brothers mending threads, oiling machines, turning on and off the electric power which controls the work of the mill.

They have spent many a holiday in the woods, and have rejoiced, howbeit subconsciously, in all the beauty and charm and fascination which nature holds for most of us.

They watch the landscape gardener make a clearing in the woods for the dairyman's cottage. They see his men felling trees and pulling stumps in the latest and most approved method. And when the stump holes fill with water and the mosquito larvæ appear they help to pour on the oil that shall exterminate this pest and insure to the people of the village a summer of peace and comfort.

They have discovered that the gardener does not use the saplings in his nursery when he plants the shade trees in the superintendent's dooryard. He brings them from the forest, fully grown, and measuring 20 feet from limb to limb, and here they rise, in a single day, giving the same profusion of leaf and shade to this household that is enjoyed by those who have waited 20 years for trees to reach maturity.

Need of the school to consider this environment.—All these activities of the child himself and the people around him make up the sum of his existence. They are his world, his life, and his immediate interest, and should find some place in his school work.

The miracle of spring takes place under his very eyes and becomes one of his most cherished experiences. Pure milk supply is a most vital subject, involving as it does the broader subjects of nutrition, sanitation, and the conserving of food. The story of cotton, its connection with the progress of the world in inventions and manufactures; its economic bearing upon the history of the world's commerce, and especially upon the social and civic life of the people of North Carolina; its vital relation to the everyday life of the children in this mill village community—these interests create an unusual opportunity for the development of projects, both in the course of study and in the daily recitation.

The use of electricity, where it is generated, and how it is carried long distances, enabling the manufacturer to establish his factory in out-of-the-way places far removed from the power that controls the machinery, is a subject of the utmost importance to all the people connected with a cotton mill and should be amply discussed in their schoolrooms.

Outline of work.—As the work was finally organized, the home and its activities were used as a center of interest at the beginning of the school year. The children in the two first grades began by making observations of their own homes and discussing with the teacher how they were built and how furnished. Then each child made a booklet, putting a picture of a house on the cover. Each week the pupils planned the suitable furniture for a room in the house. From catalogues and magazines they cut and arranged furniture for a living

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room, bedroom, dining room, and kitchen. A study of the family life of the home grew out of this study of the house and included many lessons in civics.

Reading and language lessons were developed. The sentences were formulated by the children during the reading exercise and were written on the blackboard by the teacher, later to be typed and bound into small reading books which contained eventually all the reading material which this project included.

Early drawing lessons on the blackboard trained in flexibility and control, and led up to the first lessons in penmanship. Outlines of houses and flat drawings of furniture afforded excellent models for this work.

In language periods the activities of the home were posed and dramatized and many lessons in social etiquette were inculcated, since these children had the habit of opening front doors and of wandering at will through any house in the village. The story hour was filled with selections which have a peculiar charm for children, on account of their repetitive quality the Three Pigs and Their Houses and The House That Jack Built being especially appropriate.

The second grade furnished a house and dressed a set of dolls to live in it. The third grade watched the building of a house, and as the teacher photographed from day to day with her camera the progress of the building the pupils made blue prints for a little brochure on house building. The fourth grade in this school made a special study of the community grocery store. They brought small samples of condiments from home and hung them in bottles on a chart, reporting from time to time on the source and manufacture of these products. The fifth grade made a study of the village with reading and language lessons bearing upon the activities of the town, the mill, the Y. M. C. A., which was its social center, the church and school, the community dairy, piggery, and the community gardens. Booklets were also made in this grade and blue prints inserted of different views of "our village." Seventh and eighth grade pupils carried this study of local environment out into a larger study of American cities, how they were founded, their plan, location, governments, etc.

Underlying this framework of civic interest ran a study of cotton from seed to loom apportioned among the different grades, which included numerous lessons in agriculture, industrial science, and nature study.

Here was a line of work especially adapted to each grade of the school in separate units and yet with relationships established between the different grades and a line of continuity running through from grade to grade which held the whole plan together and sustained its logical sequence from the beginning to the end.

I. PROJECTS IN A MILL VILLAGE SCHOOL.

THE HOUSE PROJECT, GRADES I AND II.

I. *History and geography.*—Homes in other times—Hiawatha's Pocahontas', Pilgrim's, Washington's, Lee's, Jefferson's, Lincoln's.

II. *Nature study.*—Homes of birds and insects—the robin, spider, snail, turtle, aunt, and bee. Homes of animals—the squirrel, rabbit, beaver, and bear.

III. *Literature.*—Stories—How the Sheep and Pig Set Up House; The Three Little Pigs. Poems—Foreign Children—R. L. Stevenson. Songs—There's No Place Like Home. Songs and games—London Bridge Is Falling Down.

IV. *Art.*—The Swallows—Laux. Ann Hathaway's cottage.

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PLYMOUTH PROJECT: PILGRIMS GOING TO CHURCH.

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PLYMOUTH PROJECT: SMOKING THE PEACE PIPE.

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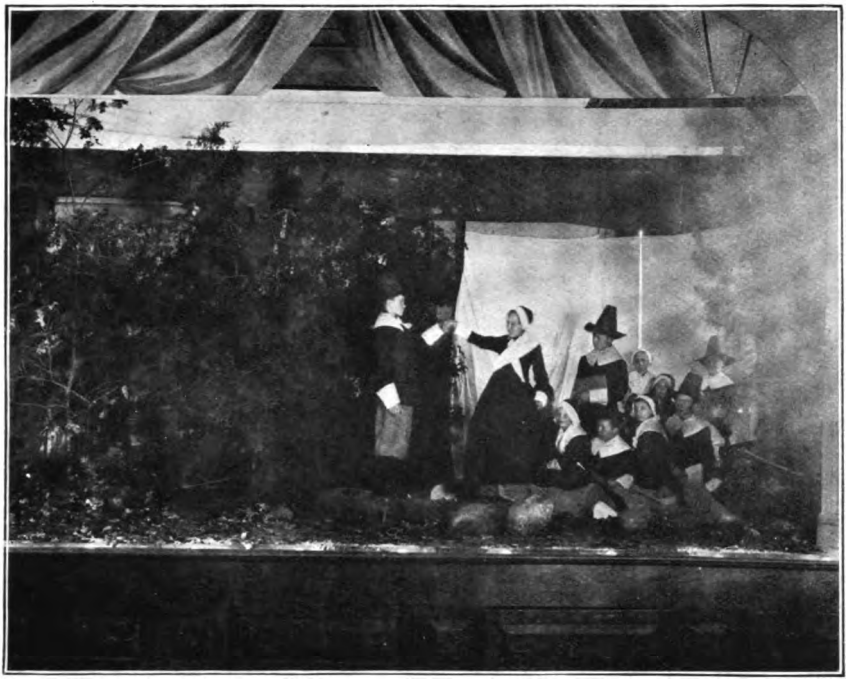
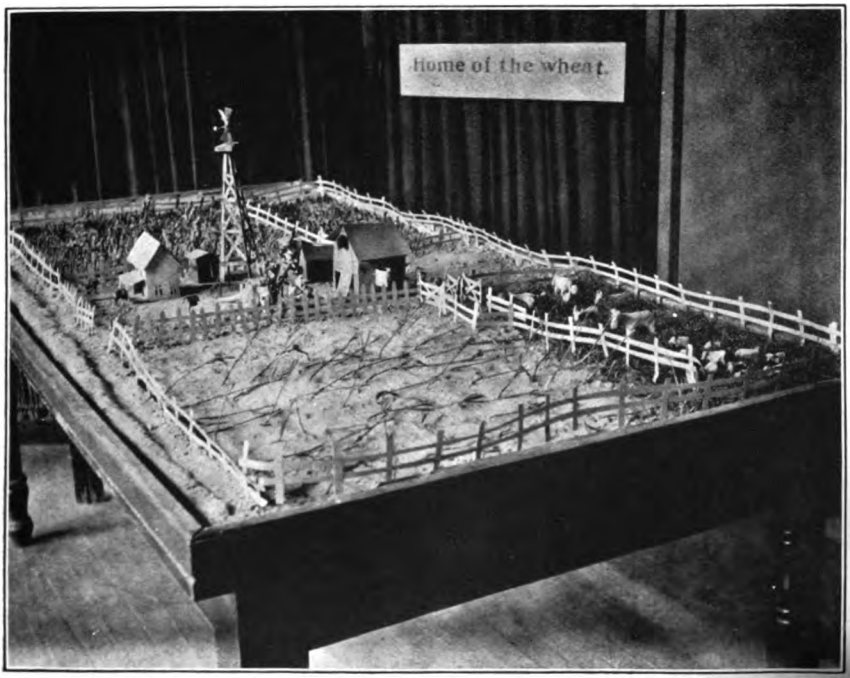


A. PLYMOUTH PROJECT: THE LANDING OF THE PILGRIMS.



B. BUILDING A FARM ON THE SAND TABLE.

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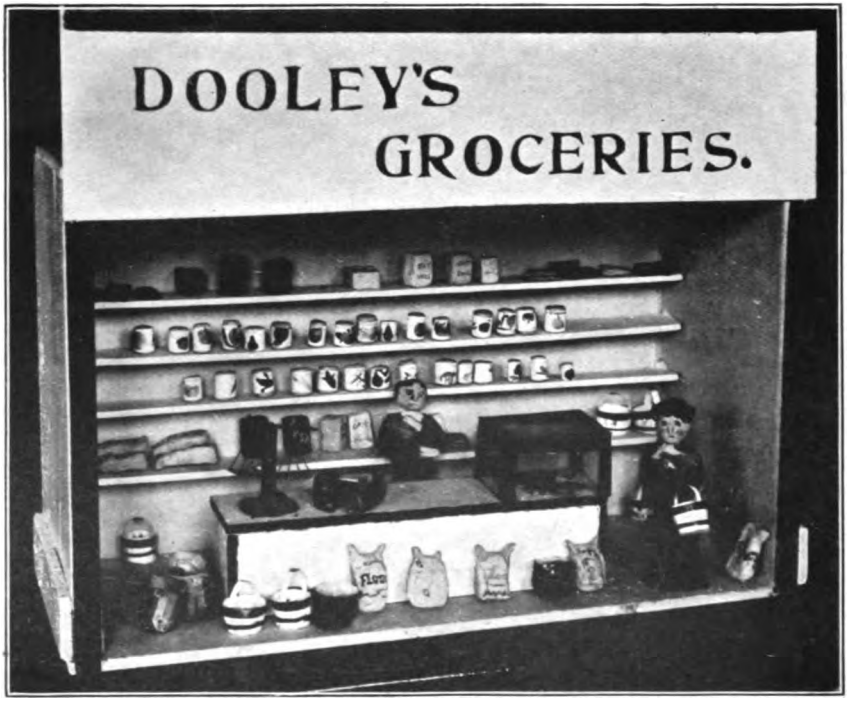
A. KNEADING BREAD—FIRST AND SECOND GRADES.



B. MAKING A GROCERY STORE: A PROJECT IN SLOYD AND NUMBER.

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V. *Language.*—Projects in modes of expression—telling, drawing, picture-book making, reading, writing of units in these projects.

1. Telling—informal conversations between teacher and pupils; story-telling; reciting poems; reports on home work.
2. Making—making picture books of homes in different lands; cutting and pasting pictures on sheets of paper and binding them into books.
3. Reading—lessons from the blackboard formulated by the children and typed by the older pupils for permanent use.
4. Drawing—drawing on the blackboard the different units from these projects. (Exercises in free-hand movement as a technical training in writing.)
5. Writing—early lessons in copying—titles under pictures in house book. Later lessons in composition.

THE COTTON PROJECT FOR ALL GRADES.

THE COTTON FIELD.

I. *Plowing for cotton in the South:*

1. Time and method of plowing; deep furrows, stalk cutter used before plowing, and stalks left on the field as fertilizer; other fertilizers used.
2. Plowing cotton fields in other lands; plows of long ago and now.

II. *Planting cotton in the South:*

1. Kinds of soil best suited to the growth of cotton—light, sandy, loamy soil.
2. Planting by hand and by a cotton planter—first in rows, and then thinned into hills.

III. *Cotton growing:*

1. Germination of the cotton seed.
2. Climatic conditions affecting the growth of cotton: Rain, atmosphere, frost, and heat.
3. Geographical areas for the growing of cotton: 35 degrees latitude either side of the Equator; sea-island cotton.
4. Cotton growing in other lands: Egypt, India, South America, Russia, and China; irrigation of an Egyptian cotton field.

IV. *Cultivating the cotton plant:*

1. The principle of capillarity in the soil; dry farming as a reclamation project.
2. The use of the hoe and the spread-tooth cultivator.
3. Constant cultivation of the cotton field.

V. *The cotton flower:*

1. Parts of the flower and their use.
2. Pollenizing the flower.
3. How the seed cradle forms.
4. The boll weevil, its depredations and extermination.

VI. *Picking cotton:*

1. Picked by hand, as no successful machine has yet been invented.
2. Hands pick on an average 100 pounds per day, at 2 cents per pound.
3. Cotton is weighed in the field and credit given each picker.
4. Crude scales in use for weighing cotton.

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VII. *Ginning cotton:*
1. Removing the seeds from the cotton fiber: the cotton is hauled from the fields to the gin and the seeds are removed there.
2. Eli Whitney and the cotton gin.
3. Mixing seeds in the gin leads to deterioration of species of cotton.
4. Cotton ginning on the old plantation.

VIII. *Baling cotton:*
1. Pressing the cotton into bales; a modern compress and a cotton screw in the old plantation; former reduces 500-pound bale from 3 feet to 12 inches in height.
2. Modern bale is 5 by 5 by 3 feet and weighs about 500 pounds.

THE COTTON PROJECT FOR MIDDLE GRADES.

WHERE COTTON COMES FROM.

United States.

I. The famous "Cotton Belt" (producing upland cotton): Nearly three-fourths of the world's supply of cotton is produced in the Cotton Belt of the United States, comprising the Carolinas, Georgia, Alabama, Mississippi, Louisiana, Texas, Oklahoma, and parts of Virginia, Tennessee, and Florida.
1. The delta areas are found in the States of Mississippi and Missouri.
2. The South Atlantic areas comprise North Carolina, South Carolina, Georgia, Florida, Alabama, and parts of Virginia.
3. The intermediate areas are Tennessee, Mississippi, Arkansas, and Louisiana.
4. The southwestern division is Texas and Oklahoma.

II. The Sea Island cotton area in South Carolina, Georgia, and Florida: Sea Island cotton is grown for its unusually long and silky fiber, which is used for making fine fabrics and laces. It is used also where great strength and durability are required, as in the manufacture of cloth for the best grades of automobile tires.
1. The South Carolina areas are along the coast on the Sea Islands, the chief of which are James, Edisto, John, and Wadmalaw.
2. The inland area is confined to the counties lying along the coast of Georgia and northern Florida, a few miles inland from the shore line.

III. The Arizona-Egyptian cotton in the Salt River Valley in Arizona: Egyptian cotton until very recently has been produced commercially only in the delta and lower valley of the Nile River, in Egypt. Its most striking characteristics are length of staple combined with great strength and fineness. Other areas are—
1. The Salt River area in Arizona.
2. The Gila Valley area in Arizona.
3. The Yuma Reclamation Project.

IV. The Durango cotton in California: While Egyptian cotton can be and is successfully cultivated in the Imperial Valley, California, it is not so popular as the new Durango variety.
1. Imperial Valley area.
2. Colorado Valley area.
3. San Joaquin Valley.

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THE COTTON MILL PROJECT FOR MIDDLE GRADES.

WHAT IS MADE FROM COTTON.

Southern mills.—Dimity cloth, and similar output. Output of the North Carolina mills—yarns, sheetings, print cloth and drills; about one-fourth consists of checks, ginghams, denims, and plaids, about one-twelfth of fancy goods, high-grade dress goods, and sateens.

South Carolina mills produce smaller quantity of yarns, but about three-fourths of their products are sheeting, shirting, drills and print goods, while one-sixth of their output consists of denims, ginghams, and ticking. A large proportion of fine goods is produced in North Carolina.

The product of the Georgia mills like that of North Carolina.

The product of the Alabama mills like that of South Carolina.

Improvement noted, lawns, fancy goods, and mercerized goods coming out of the South.

Through the mill.—(1) Bale of cotton enters mill—weighs 500 pounds, worth $150, measures 5 by 5 by 3 feet; (2) mixing room, mixed with other bales; (3) lapping, cleaned and formed into a lap, or bat, or roll; (4) carding, fibers straightened, lying parallel; (5) drawing, stretched and pulled out to prepare for twisting; (6) slubbing, fiber twisted and wound on bobbins; (7) roving, twisted still finer and wound on smaller bobbins; now ready for spinning.

Ring spinning; used in the South. Roving spun into warp and filling; warp runs lengthwise of the loom, and filling is carried crosswise by rapidly moving shuttles.

Cloth room; cloth carried in bolts to the cloth room and cleaned and finished. Cloth shipped away for this purpose is called converter's goods. Dimity cloth is shipped to Baltimore, Md., for bleaching and is made into men's underwear at the factories in that city.

Economic values.—Cotton fiber in 1918 valued at $1,750,000; cloth from it valued at $2,000,000,000; persons employed in production, manufacture, and commerce, 10,000,000; persons dependent upon it for food, shelter, and clothing, 50,000,000; dimity cloth increases four times in value from raw material.

Geography.—Spindles: Active cotton spindles in the United States 1914: In the cotton-growing States, 12,711,303; New England States, 17,408,372; all other States, 1,987,897.

United States ranks second in the world's spindleage: In Great Britain, 56,576,108; United States, 30,579,000; the world, 142,000,000.

North Carolina ranks second in the spindleage of the Southern States (1910): South Carolina, 3,715,894, North Carolina, 2,939,576.

Location of factories in the South: In the Piedmont—relation of power to location of mills; relation of labor to the location of the mill; relation of raw material to the location of the mill.

History.—Growth of the factory: (1) Primitive wheels and looms; (2) primitive modes of carding and spinning and weaving; (3) primitive methods of power processes—water power, steam power, electric power.

Cotton as a factor in the history of the United States (its manufacture): (1) A factor in the Civil War; (2) in the economic history of the South; (3) in the social life of the South.

Commerce.—Transportation as a factor in the manufacture of cotton in the South: (1) Good roads; (2) vehicles; (3) points of shipment, access, etc.; (4) imports and exports.

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Labor.—Labor as a factor in the manufacture of cotton in the South: (1) Mill workers—Wages, hours, living conditions, educational advantages; (2) relation of price of cotton to price of manufactured article, and to the wages paid the mill worker; (3) high cost of living in relation to the mill worker.

Civics.—The mill worker as a factor in the civil life of the community: (1) What he contributes; (2) relation of the employer; (3) what he exchanges for his labor; (4) what he receives for his labor.

THE DAIRY PROJECT.

I. *Care of the cow.*—Clean milk: The milking house; washed with water from a hose before the cows are brought into be milked. (Inspect the milking house.)

The cows; brushed and combed and bags washed. (Observe milking.)

The dairyman; clean hands and clothing.

The milking utensils; pails, cans, and cloth strainers must be boiled in water every time they are used. They are aired and sunned in a screened cupboard, where flies can not reach them. (Inspect utensils.)

Cooling rooms; walls lined with thin strips of cork to keep out the heat. Ice stored at the top and temperature kept at 38 degrees. (Observation.)

Bottling the milk; milk bottled in the cooling room. One dozen bottles filled at a time and covers put on before air or dirt can get into the bottles. (Observation of bottling and inspection of bottling room.)

Food for the cow: Grass in the meadow or pasture lot in the summer time; hay from the barn and a warm bran mash in the winter. (Inspect the dairy lot.) Forage, silage, and cottonseed meal. (Observation of feeding.)

Cool, fresh water to drink. (Inspect the concrete water basin.)

Weaning the calf: Calf taken from its mother: Why? When?

Teaching the calf to drink milk from a pail. (Observation and inspection of calf house.)

II. *What the cow gives us.*—Milk, cream, butter, cheese, dried beef, gelatine, leather, glue, bone buttons, hair in plaster, tallow candles, soap, fertilizer. (Detailed study of any one of these products. A collection of these products mounted on a chart in the schoolroom, made from specimens brought in by the pupils.)

III. *The child's food.*—Milk, butter, cheese. "The first food a family should buy is milk." "The last food to be dispensed with is milk." (Material for these lessons found in the bulletin on Health Education, "Diet for the Child," United States Bureau of Education.)

IV. *History and geography* (includes number lessons, and special study of North Carolina's status in dairy products; Texas fever tick.)—Cows of olden times; relation to environment; structure, covering, prehension of food defense.

2. Study of product maps from the Department of Agriculture: Where cows are raised in the United States; where creameries are built in the United States; where cheese is made in the United States.

3. The cowboy on the western plains; driving to the round-up; in a stampede; the herd at night.

4. The cow's cousins: In America, the deer and bison; in Africa, the water buffalo; in India and Japan, the buffalo.

V. *Poems, stories, songs.*—The Farmyard Song; The Cow, The Friendly Cow; The Milkmaid, Æsop; Mooley Cow.

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THE PIGGERY PROJECT.

I. *Care of the pig.*—Hog wallows: A cool bath is soothing to a pig during the hot weather; it cleans the scruff from the skin and protects the pig from flies. A thin layer of crude petroleum on the top of the water will keep the pigs free from lice and other skin parasites. (Inspection of the pig wallow and observation of its use by the pigs.)

Food for the pig: Not adapted to living on corn alone, the pig needs a variety of food—corn, alfalfa, cowpea, and soy bean, with hay, wheat shorts, bran, tankage, skim milk, etc.

Pigs can be produced cheaper when pastures are used along with the grains, and in the South much cheaper than is possible in the corn belt. Clovers and alfalfa furnish better hog pastures than the nonlegumes. (Inspection of the feeding of the pigs in the piggery.)

Benefit of hog grazing; improving run-down land, fertilizing it, eating the weeds which the hogs relish, especially the common lamb's quarters and amaranths. The peanut is one of the best forage crops for hogs.

Economic value: Cotton following peanuts and grazed by hogs averaged an increase of 61.1 per cent, with an increase in value per acre of $22.81; with soy beans and chufas, $16.35 and $7.68, respectively.

In the South pork can be made more cheaply than elsewhere. Money spent for meat by Southern people would remain at home; would affect cotton, because the farmer could hold his cotton crop if he had pork to sell, one of the best supplements to cotton crop.

One hundred and twenty-five dollars invested in hogs returns a sale of from 5,000 to 8,000 pounds of live pork in a year, or from two to four times the amount of the investment.

II. *What the pig gives us.*—Food—Pork, ham, sausage, lard, headcheese; bones for chicken feed, bristles for brushes; leather. (Detailed study of any one of these products.) (A collection of these products mounted on a chart in the schoolroom made from specimens brought in by the pupils.)

III. *History and geography* (includes number lessons and special study of North Carolina's status in pork production. Hog cholera).—

1. Relation to environment—covering, prehension of food, defense.

2. Study of product maps from the Department of Agriculture. Where pigs are raised in the United States; why North Carolina does not raise more pork; hog cholera, infection and immunity. Pig in China, Holland, and India. Pig's cousin—the wild boar, the hippopotamus.

IV. *Poems, stories, songs.*—The Farmyard Song; The Guinea Pig; The Story of Circe; Roast Pig, by Charles Lamb; The Pink Pig.

THE POULTRY PROJECT.

I. *Care of fowls.*—Kind of fowls: General-purpose breeds—Plymouth Rocks, Wyandottes, or Rhode Island Reds. Egg breeds—Leghorns, Minorcas.

Size of flock: Depends upon available space and amount of table scraps. Not over 20 or 25 hens in a back-yard flock. Purchased in the fall, pullets rather than older hens so they will begin to lay before winter is over.

Housing: Satisfactory houses may be made from piano boxes, costing $2.50 each, one box to 8 or 10 hens.

The yard: Inclosed with board or wire fence.

Feeding: All table scraps, kitchen waste, etc., should be utilized; scraps of meat and left-over vegetables make excellent feed. Other waste products from the garden, such as beet tops, turnip tops, carrot tops, potato parings, onion

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tops, watermelon and cantaloupe rinds, the outside leaves of cabbage, waste lettuce leaves, bread and cake crumbs.

No spoiled food should be fed, and a dry mash may be added to the table scraps.

Feed at noon or at night, or both times, on a board and see that nothing is left to spoil.

A plentiful supply of clean, fresh water must always be available.

Hatching and raising chicks: Early in the spring, before May if possible, done with hens. A few day-old chicks may be purchased and reared if setting hens are not available. Chicks should not be fed until they are 24 hours old, then hard-boiled eggs and stale bread crumbs make the best food, the latter soaked in milk. Later feeding of grain, 2 parts wheat, 2 parts pinhead oatmeal, 1 part corn, 1 part rice, and 1 part millet seed; all grains cracked before mixing.

Preserving eggs: Packed the day they are laid, in water glass.

Economic value of fowls and eggs: Poultry converts table scraps and kitchen waste into wholesome and nutritious food in the form of eggs and meat. Each hen in her pullet year should produce 10 dozen eggs. The average size of a back-yard flock should be at least 10 hens. Thus each flock would produce in a year 100 dozen eggs, which, at 25 cents a dozen, would be worth $25.

Back-yard poultry flocks help in reducing the cost of living, and supply eggs of a quality hard to purchase.

These eggs cost very little, as the fowls are fed upon waste materials.

II. *What the fowl gives us.*—Food—eggs, chicken meat, feathers, featherbone.

III. *History and geography.*—1. Relation to environment—structure, prehension, and defense.

2. Study of product maps; where poultry is raised in the United States; relation to amount of improved land, with special reference to North Carolina; effect of lice and mites and their control.

3. The hen's cousins—the pigeon and quail.

IV. *Poems, stories, songs.*—The Clucking Hen; The Story of Henny Penny; Feed the Flocks.

II. THE PLYMOUTH PROJECT.

In the reorganization of the work of the mill-village school the daily program provided for an auditorium period which was used each day of the week by groups of children representing the different grades. Division 1 formed one group and included the kindergarten, the two first grades and the second. Division 2 comprised the two third grades and the fourth. Division 3 was made up of the fifth, sixth, seventh, and eighth. The groups met at different hours of the day for their exercises and came together once a week for a general auditorium period. The program for each group was similar in character and the general exercise partook of the best numbers from each division throughout the week. Too much can not be said in commendation of this period. It motivated the work of the school, it inspired the pupils to make their best effort to produce something which would be worthy of a place on the general program, and it welded the school together because a sympathetic understanding of the work of each grade was created by its presentation before the entire school.

The first half hour of the period was devoted to music, to chorus and solo singing, and to the learning of new songs. In the remaining 25 minutes the regular program was carried out. It was found necessary to indicate quite definitely the topic for each day in order to insure versatility and continuity in the exercise. On Monday a civic program was given, with reports on the civic interests of the village. On Tuesday experiments were made

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before the pupils and activities presented, supplemented by reports of others which were being carried on by groups of pupils or by individuals in the different grades. Wednesday a literary program was rendered of readings, recitations, dramatization of stories, and posing of individual characters. On Thursday reports from papers and magazines on current events were given and items of news regarding the life of the village were reported.

An improvised auditorium was necessary because no provision had been made in the school for this activity. The village church was used until cold weather drove the children into the large gymnasium of the Young Men's Christian Association, where they were made welcome unless the room was being used by gymnastic classes. Sometimes the use of the grade room was necessary, and by sitting two in a seat closely crowded together the children carried out their program. Notwithstanding these handicaps the auditorium period proved a great success and a great incentive to the project work of the school. While many of these were minor projects, the "massing of the literature and music of some special subject or special day" suggests the development of a major project through several weeks of research and study. Such a study is represented by the story of Plymouth given in the tableau vivant form, of which the program and pictures are given here.

Every child in the school bore some part in the working out of this project. The stage setting was arranged by the boys to represent the forest background of the Plymouth picture. The costumes were planned in the classroom and made at home. All the stories that were told during the tableaux were given in the child's own words by one who had been chosen by the school to represent his classmates. "Thus," reports the principal of this enterprising school community, "our program was simply the outcome of regular classroom work and represents one of our major projects."

PROGRAM OF THE STORY OF PLYMOUTH IN TABLEAUX VIVANT.

Scene I. Landing of the Pilgrims: Reading by a girl in the seventh grade.
Boys' orchestra.
Scene II. The first wash day: Story by a girl in the third grade.
Solo: Thanksgiving song by girls in fourth grade.
Scene III. Care of the baby: Story by girl in third grade.
Solo: Lullaby.
Scene IV. John Alden and Priscilla: Reading from "The Courtship of Miles Standish."
Song: The First Thanksgiving Day: Second and third grades.
Scene V. The snake skin and the bullets. Story told by boy in the fourth grade.
Boys' orchestra.
Scene VI. Treaty with Massasoit: Story told by boy in the sixth grade.
Solo: Why Mr. Gobbler Changed his Tune, by boy in fourth grade.
Scene VII. Standish and his men find corn: Story told by boy in fourth grade.
Boys' orchestra.
Scene VIII. Calling the Pilgrims to church: Story told by boy in the eighth grade.
Scene IX. The Pilgrims going to church.
Song: Thanksgiving Day: Fifth and sixth grades.
Scene X. The first Thanksgiving Day: Story told by boy in sixth grade.
Reading: President's Thanksgiving proclamation, read by boy in eighth grade.
Song by school: America.

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PLYMOUTH VILLAGE ON THE SAND TABLE AS IT APPEARED IN 1622.

The third-grade pupils in this school supplemented their study of the building activities in the village by a building project on the sand table. The town of Plymouth in 1622 was chosen because of its relation to the Thanksgiving program under way in all the grades and also because the simplicity of the project insured its success, although the pupils were without previous training in any of the modes of expression. Some retarded, over-age boys in the class were being held in school wholly through parental discipline and their whole-hearted cooperation was enlisted through their enthusiasm for this work. Recalcitrant members became eager and earnest, clumsy fingers deft and facile as they shaped with infinite care the buildings in this miniature community. Manners and customs and the characteristics of the Pilgrims and Indians were freely discussed during these activities in the schoolroom. Their hardships and fortitude and their mutual help and understanding, with something of the heritage bequeathed to us by this indomitable people, made their impression upon the boys and girls in this school. It is safe to say that more of the history of our early settlements was acquired during these periods than any amount of reading or study might have accomplished.

BUILDING THE TOWN OF PLYMOUTH ON THE SAND TABLE.

The sand was dampened and then modeled to represent the contour of the country in and around Plymouth. The seashore stretched across the length of the table about midway between front and back, curving at the right and extending along the right end of the table to meet the right-hand corner at the back. The village hill, of which we hear so much, was modeled at the middle right and connected with a chain of hills along the right end of the table. The seashore thus formed was high and rocky at the right, but low and level at the middle front. Here lay the village, within the curve of the bay and sheltered by the hills along the shore. Over it all stood the forest, with here and there the stump of a tree which had been felled by a Pilgrim father. The village street ran along the shore from the left end to the hill at the right. Between it and the sea stood the six log cabins with Governor Bradford's house, which was also used as the church, across the street in the middle of the village. The *Mayflower* rode at anchor in the bay, and the famous rock was placed midway along the shore.

Modeling the houses.—Seven log houses were made of twigs and clay which measured when finished 4 by 3 inches. A flat, thin slab of clay for the floor of the house was laid on a piece of carboard and a rectangle 4 by 3 inches was drawn on it. Twigs three-eighths of an inch in diameter were cut to measurement, and rolls of clay the same size were modeled. The houses were built up in rectangular form over the diagram on the clay floor, first a roll of clay and then a twig, 4 inches long at the sides and 3 inches wide at the ends. These were pressed together to form the walls of the house, with spaces left for a door and window. The roof was a thin slab of clay cut in the form of a rectangle the size of the floor. It was bent slightly through the middle to form the peak of the roof and was pressed carefully into place on the top of the walls. A clay chimney was modeled and placed at the back of the house. Palisades of pointed twigs were built around each house after it was placed on the sand table. These twigs were buried in the sand one-third their length and the palisade when completed stood nearly as high as the house. The fort on the hill was made like the houses. It was square in shape, with a flat

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roof and loopholes around the sides near the roof, through which the muzzles of the guns were pointed.

Modeling the figures.—Pilgrims and Indians were modeled in clay and were dressed appropriately in crêpe paper. The women's dresses and men's hats and capes were made of black crêpe paper, and the women's caps, kerchiefs, and aprons of white crêpe paper. The Indians were dressed in blankets of tan-colored crêpe paper lined with red and white and brown feather headdresses, cut also of crêpe paper.

Many activities were represented by these figures, the Pilgrims busy at their tasks and the Indians hiding behind the trees watching them.

A THANKSGIVING PLAY—THE LOST PRINCE.

This little play was taken from a Thanksgiving story which appeared several years ago in St. Nicholas. It has many values. It brings the atmosphere of the first Thanksgiving time clearly before the children. It depicts the manners and customs of the Pilgrims and Indians and their friendly intercourse. It affords an opportunity for every pupil in the class to take some part in the play.

It was written by a class in the third grade during their language periods and developed unusual skill in the use of oral and written language. The picturesque costumes of the Pilgrims and Indians, the touch of romantic adventure which the episode develops, and the dramatic culmination of the movement make it a delightful piece of play acting.

Setting of the play.—Branches of trees at the back of the stage will give the forest background needed for the three acts of the play.

In the first act the gable end of a house is seen among the trees. This may be made of a light wooden framework covered with paper, with door and window showing.

The seashore in the second act may be represented by a stretch of blue cloth or canvas at the right of the stage.

The feast occupies the foreground in the third act, two long tables, one of Indians and one of Pilgrim men, with Pilgrim women serving.

THE LOST PRINCE.

CHARACTERS.

Stephen Hopkins, *a Puritan father.*
Elizabeth Hopkins, *a Puritan mother.*
Giles Hopkins, *a little Puritan boy.*
Constance Hopkins, *a little Puritan girl.*
Governor Bradford, *the governor of Plymouth.*
Massasoit, *an Indian chief.*
Wamsutta, *his little son.*
Samoset, *an Indian friend of the Puritans.*
Puritans and Indians.

Time—Thanksgiving, 1622.

ACT I.

SCENE I. *Clearing in the forest, with Puritan house in the background. Door opens and Mr. and Mrs. Hopkins come out with bread and pies in their hands. Giles and Constance follow them to the door. All are dressed in Puritan costume. Constance is wiping her eyes on her apron.*

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Mr. Hopkins. Remember, children, you are to stay in the house until we come home.

Constance. Won't you please bring me some cake?

Mrs. Hopkins. If you are good children, I will bring you some of Mrs. Allerton's pound cake.

Mr. Hopkins. You must not leave the house. There may be Indians in the forest.

Giles. The Indians will be at the feast, won't they?

Mr. Hopkins. Massasoit and his men will be there, but the Narragansetts are on the warpath. They may be hiding in the forest now.

Constance, Oh, I'm afraid, mother.

Giles. Pooh! Don't be a "fraid cat," Constance. I'll take care of you.

Mr. Hopkins. Nothing can harm you if you stay within.

Mrs. Hopkins. Do as father says, and keep indoors. Good-by.

Giles and Constance. Good-by.

(*Father and mother disappear in the forest and children go into the house and shut the door.*)

SCENE II. *Same. Children standing at the window. Giles sees a squirrel run across the clearing in front of the house. They laugh, then open the door and come out.*

Constance. Where did it go?

Giles. It ran this way. (*Running toward the woods.*)

Constance. Let's catch it, and make a pet of it.

Giles. I'll make a cage for it.

Constance. What color was it?

Giles. It was gray, with a big bushy tail.

Constance. (*Starting toward the woods.*) Oh, there it is in that tree.

Giles. There it goes, see it run. Come on, I know I can catch it.

(*The children chase the squirrel around in front of the house, until it leads them away into the forest.*)

SCENE III. *The seashore. Constance kneeling and crying. Giles trying to comfort her.*

Giles. Don't cry, Constance, I can find the way.

Constance. That is what you always say, and we are farther away than ever.

Giles. No, we're not, Constance; we'll find Plymouth just around this bend. I am sure we are coming toward it.

Constance. Oh, why did I ever go out of the house!

Giles. It was that wicked squirrel. Maybe it was the devil tempting us. Governor Bradford says he can change into anything.

Constance. He did it just to try us. Oh, what will father and mother say?

Giles. Never mind, Constance, let's go on. We'll never find Plymouth sitting here and crying. Let's walk on.

(*Wamsutta, a young Indian boy, comes walking toward them. He sees that Constance is crying.*)

Giles. Look, Constance, look. See who's coming.

Constance. (*Looking up, and then rising to her feet.*) Oh, Giles, it's an Indian. A little boy. Aren't you afraid of him?

Giles. No, I'm not. I'm as big as he is.

Wamsutta. How do, English?

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Giles. How do you do? (*Constance hides behind her brother. Wamsutta begins to dance.*)

Constance. What's he doing now?

Giles. Why, he's dancing. It is an Indian feast dance. I've seen Samoset do it lots of times.

Constance. He wants to be friendly.

Giles. Yes; and I want to go home.

Constance. (*Beginning to cry again.*) Oh, Giles, shall we ever find Plymouth?

Wamsutta. (*Pointing and nodding toward the forest.*) Plymot? Plymot? Come. Go to Plymot.

Giles. Look, Constance, he is pointing and trying to say "Plymouth."

Constance. Do you think he knows where it is?

Wamsutta. (*Walking toward the forest and pointing.*) Plymot. Go Plymot. (*He leads and the children follow him into the forest.*)

ACT II.

SCENE I. *Thanksgiving Day in Plymouth. Two long tables set with food. Puritan men at one. Governor Bradford seated at the head, with Stephen Hopkins at his right. Indians at the other table, with Massasoit at the head and Samoset at his right. Puritan dames serving. Massasoit does not eat nor speak; looks down at his plate, lost in thought.*

Governor Bradford. (*To Stephen Hopkins.*) Why is Massasoit so silent? Is he angry?

Stephen Hopkins. I do not know. He has eaten nothing.

Governor Bradford. I am afraid he is offended. He is our only friend in all this wilderness.

Stephen Hopkins. We could ill afford to lose his friendship.

Governor Bradford. The Narragansets are uprising. We shall need the protection Massasoit can give us.

Stephen Hopkins. (*To Mistress Hopkins, who is serving near them.*) Elizabeth, dost know why Massasoit is silent? Is he ill?

Mistress Hopkins. No, Stephen, I do not know. I saw he was sad and silent.

Governor Bradford. I am afraid he is angry.

Mistress Hopkins. He is thinking of something far away.

Governor Bradford. I hope he is not plotting against us.

Mistress Hopkins. Samoset will know, and he will tell us. He is our friend.

Governor Bradford. Send Samoset to me; I will ask him.

(*Mistress Hopkins goes to Samoset and speaks to him quietly. Samoset rises from the table and goes to Governor Bradford.*)

Governor Bradford. Hast noted Massasoit to-day, Samoset?

Samoset. Yes; he eats not, nor speaks.

Governor Bradford. Dost know the cause? Is he angry with the people of Plymouth?

Samoset. Nay, he hath great sorrow. He hath lost his only son.

Governor Bradford. Is he dead, Samoset?

Samoset. Nay, he hath been stolen. The Narragansets have taken him.

Governor Bradford. Can not Massasoit rescue him?

Samoset. He is not strong as the Narragansetts. If Massasoit make war, they kill the child.

Governor Bradford. How could they take him?

Samoset. We are away at war. They come in his wigwam and steal child away. We come home. He is gone.

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Governor Bradford. 'Tis a weighty sorrow. I have much feeling for the sad father.

Samoset. The great chief speaks not till his son come back.

Governor Bradford. Can not Massasoit rescue him?

Samoset. He is not strong like the Narragansetts. If Massasoit make war, they kill the child.

Governor Bradford. Tell your chief we sorrow with him. If he needs, we will help him.

(*Mistress Hopkins passes across to the table with a plate in her hand. Constance runs out of the forest to her and buries her face in her mother's dress. Giles and Wamsutta are seen standing behind a tree.*)

Constance. Oh, mother, we were lost, and could not find you anywhere.

Mistress Hopkins. Lost in the forest! How did you ever find us?

Constance. A little Indian boy showed us the way.

Mistress Hopkins. What will your father say?

Mr. Hopkins. Constance, how came you here? Where is your brother?

Constance. He is there. (*Pointing to the tree.*) Oh, mother, I am so sorry!

Mr. Hopkins. Giles, come here.

(*As Giles comes toward his father, Wamsutta steps into the clearing and stands looking at Massasoit. Massasoit looks up and sees the boy. He strides over to him, lifts him up on his left arm, and raises his right hand.*)

Massasoit. Joy of my life, warmth of my heart, light of my steps, sunshine of my wigwam, thou art come back to me!

III. BUILDING A FARM ON THE SAND TABLE.

A PLAY PROJECT.

The building of the farm on the sand tables is a project which has been frequently used in primary and kindergarten schools as a center of interest in the daily program. Such a study is rich in subject matter. From the art side it offers a wide field of selection. It possesses also a broad historical background and a voluminous literary content and presents numberless opportunities for the presentation of problems in nature study.

The activities of the farm are varied and suggest many projects for the primary grades. These farm problems make an especial appeal to the child because his larger interest in life lies in the matter of feeding. A close connection is easily formed between this interest in his consumption of food and the activities that produce it, and this affords most excellent material for the problem-project type of instruction.

OUTLINES ON THE FARM STUDY.

Subjects of study:

1. Agriculture: Wheat; corn; potatoes.
2. Animal life: The horse; cow; sheep; pig; hens and ducks; bees.
3. Shelters: House; barn; henhouse; windmill; pigpens; dovecote.
4. Tools: Plow; drag; scythe; hoe; rake; thrasher; ax; saw.
5. Gates and fences.
6. Vehicles: Carts; wagons.
7. Mills.

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Sources of impression.

I. Nature study:
1. Agriculture: Form, cultivation, and use of wheat, corn, and potatoes.
2. Animal life: Structure, care, and use.
3. Buildings: Suitable materials.
4. Tools: Raw and manufactured materials.
5. Vehicles: Application of steam and electricity.
6. Mills. Application of steam.

II. Art:
1. Agriculture: The Gleaners; The Sowers; The Harvest Moon; The Angelus.
2. Animal life: The House Fair; The New Born Calf; The Churning; The Shepherdess; The Sheepfold; A Barnyard in Normandy; Feeding the Hens; The Orchard.
3. Shelters: Mount Vernon; Ann Hathaway's Cottage; The Woodcutter.
4. Tools: The Man With the Hoe; The Song of the Lark; Ploughing; The Haymakers; The End of the Day.
5. Vehicles: Meeting of the Ways.
6. Mills: Primitive mills.

III. History:
1. Agriculture: Cortez introduces wheat into Mexico. Pilgrims discover corn. Wild potatoes in Virginia.
2. Animal life: The horse in Mexico; Sacred cow in India; Shepherds and sheep of olden times; The wild boar; The eider duck; The Pilgrim's turkey; Wild honey and beeswax.
3. Buildings: Homes in other lands. Cliff dwellers, Zuni Indians, Forest Indians, Longhouse Indians, Eskimos, Hottentots, and Pilgrims.
4. Tools: Lincoln's boyhood on a farm; Washington's boyhood on a plantation; Primitive tools.
5. Vehicles: Evolution of wheeled vehicles.
6. Mills. Primitive mills.

IV. Stories, songs, poems, and supplementary reading:
1. Agriculture: (*a*) Stories: Ceres; Little Red Hen; Story of Joseph; Redheaded Woodpecker; King Alfred and the Cakes; Black Beauty; Io; Arachne; Circe; Little Hen; King Solomon and the Bees; The Walnut Tree that Wanted to Bear Tulips; Peter, Paul, and Espen; The Chariot Race; Will of the Mill. (*b*) Poems: Ploughman; The Husking; The Potato; The Arab's Farewell to His Horse; The Friendly Cow; Little Bopeep; The Three Little Pigs; The House in the Sun; To a Honey Bee; I Remember; The Village Blacksmith; Boy Lives on our Farm; The Miller of Dee. (*c*) Songs: Alice's Supper; Swing the Sickle; Busy Farmer; A Gallop, A Trot; Thank You, Pretty Cow; Song of the Shearers; The Pigs; Quack, Quack, Says the Duck; A Jolly Little Rover; The Carpenter; The Blacksmith Over the River; The Mill. (*d*) Reading: The Story of Joseph; Mondamin; A Wild Horse; The Dog in the Manger; The First Weaver; The Wild Hog and Sharp Tooth; Little Duck and North Wind; How Bodo Found Wild Honey; The Tree and the Woodcutter; Bodo's Hammer and Knife; Children of the Plains; Children of the Cliffs.

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REFERENCES.

Art: Perry pictures.

Literature: Greek Myths, by Agnes Cook; Fifty Famous Stories, by James Baldwin; Black Beauty, by Anna Shewell; The Chariot Race (Ben Hur), by Lew Wallace; Will of the Mill, by Stevenson.

Poems: Lowell, Whittier, Stevenson, Mother Goose, Longfellow.

Songs: Eleanor Smith, Gaynor.

Readers: Dopp's Tree Dwellers; Fox's Indian Primer; Æsop's Fables; The Bible.

Modes of expression.

I. Telling:
   Reproduction of stories, description of nature observations, and the recounting of historical episodes and narratives.

II. Drawing on the blackboard, painting, and cutting colored posters:
   Representation of the activities of the farm; the animal life, and the shelters; tools and vehicles on the farm.

III. Making and doing:
   1. Agriculture: Sow seeds on sand table in appropriate fields. Germination; capillarity of soils; pollization; visit a farm, observe plowing, sowing, etc.; visit a mill, observe process of grinding wheat; visit a bakery, observe process of making bread; making bread in school; cooking cereals; canning, preserving, drying fruits; making jelly; making maple sugar.
   2. Animal life: Making butter, cheese, and curdles; cooking eggs; making soft soap.
   3. Buildings: Making house, barn, henhouse, windmill, pigpen, dovecote out of clay or manila paper; making gates and fences, cart, wagon, and sleigh out of wood and manila paper.
   4. Tools: Cutting from tin—plow, drag, scythe, hoe, rake, ax, saw; making thrasher out of manila paper.
   5. Mills: Making flour mill and wheat elevator out of manila paper.

IV. Modeling:
   1. Agriculture: Model wheat, corn, potatoes, before and after germination.
   2. Animal life: Model horse, cow, pig, hens and ducks, and place them in fields on the sand table.
   3. Shelters: Model buildings.
   4. Tools: Model tools in clay.
   5. Model primitive mills: Cliff dweller's mealing stones; Zuni turning stones; water mill; windmill.

V. Gesture:
   Stories, songs, poems, and reading lessons reproduced in pose and dramatization.

VI. Writing:
   Development lessons in reading and language, reproduction of stories, and original accounts of specific lessons given in the subjects of study.

NUMBER VALUES IN THE BUILDING OF A FARM ON THE SAND TABLE.

Out of doors:

Material: Tape measure, twine, and pupils.

Statement: 1 acre equals 8 rds. by 20 rds.

1 rod measured on the playground.

1 sq. rd. measured on the playground.

1 acre measured on the playground.

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In the schoolroom:

Material: Rules, pencils, and checked paper.

Statement: 1 rd. reduced to ½ in.

1 picture rod on paper equals ½ in.

1 picture sq. rod. on paper equals 1 check measuring ½ sq. in.

1 picture acre on paper equals 8 checks by 20 checks or 4 in. by 10 in.

1 sheet of checked paper measures 8 in. by 10 in.

4 picture acres can be drawn on 1 sheet of checked paper.

On the sand table:

Material: 24 sheets of checked paper with 4 picture acres on each.

Statement: 1 rd. equals ½ in.

Sand table measures 32 in. by 72 in.

Reduced to rods, equals 64 rd. by 144 rd.

Area of sand table covered with 24 sheets of checked paper with 4 acres in each.

Margin on two sides left for roads.

Counting picture acres on the sand table.

There are 56 acres in our farm.

Laying out the sand table in fields—16 acres of corn, 8 acres of millet, 12 acres of meadow, 24 acres of wheat, and 12 acres of oats, 16 acres for farmyard, and 8 acres for orchard.

IV. BUILDING A TOWN ON THE SAND TABLE.

A PLAY PROJECT.

The building of a town on the sand table offers an opportunity for concrete lessons in civic life through a study of the problems which the child must meet in his everyday experiences. The town government, the laws of conduct in public places, and many of the facts concerning drainage, sewerage, and sanitation may be impressed by this mode of teaching. Wholesome forms of recreation may be suggested, and ways and means indicated by the teacher whereby the children in a town may help to beautify it, to improve its appearance, and to make it a pleasant place in which to live.

The choosing of a profession, a trade, or an occupation by a child who assumes some of the responsibility of the character he represents, even in play, must lead him to appreciate the service which the older members of his community render to the people with whom they live.

1. *Laying out the town on the sand table.*—A group of children from the first to the fifth grades were building a miniature town on the sand table. Streets had been laid out and the town platted into blocks and town lots. A central square, in which the courthouse, the church, and the school were to be set was surrounded on four sides by streets and business block after the plan of many county seats in this country.

2. *Selecting and fencing the lots.*—The home lots were chosen in the same way that homesteaders select their farms in the West, by right of first possession. In the schoolroom the children swarmed around the table when th signal was given and located their claims. When the fencing operatio began each child, with a small bundle of toothpicks, fenced in his lot b sticking the toothpicks in the wet sand along the line of his boundaries.

3. *Government of the town.*—The town government was organized by th class and children selected by them to administer it. Laws of conduct on the street and in public places were discussed. One child, speaking evi

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from a full experience, announced, "You don't dare snatch an apple off the fruit stand," and another informed the class with a solemn shake of the head, "If you ride a bicycle on the sidewalk, you get pinched."

4. *Professional life and business life.*—The professions were represented by children whose fathers enjoyed distinction as physician, lawyer, minister, or professor. The little girls chose the womanly occupations, those of milliner, school-teacher, seamstress, and clerks in the post office and the dry goods store. The butcher, the grocer, the druggist, and the merchant were all represented by their tiny shops on the main thoroughfare of the town. The milliner shop, made of manila paper, and measuring just 2 inches by 1 inch, sported a gay front window, with hats and bonnets painted on in the very latest models.

5. *Drainage and sewerage.*—Drainage and sewerage, street lighting, and paving were studied and a fund of experience revealed by children who had stopped along the street on their way to school to look into holes under sidewalks that had been opened for pipe laying and sewer cleaning. Bridges were built across the river that ran through the town, and pavement laid along the street with blocks of clay.

6. *Amusements.*—The last demand that came from this small community was for some form of amusement. The circus appealed to the popular fancy, and an open field at the end of the town was selected where a tent was erected and a circus parade was planned for. So eagerly was the material for this popular pageant contributed that when the circus procession was finally formed it extended twice around the town and out even to the door of the tent.

Stories, songs, and poems.—Stories, songs, and poems for the work in literature were selected which had a bearing on the various subjects of study. These were taught to the children and then used as a basis for reproduction in the different modes of expression. "Romulus and Remus, and the Founding of Rome," is a good example of this type of story. Songs of the trades, like "The Carpenter," and poems like Longfellow's "My Lost Youth" not only have a special significance from the tropical standpoint but are beautiful in themselves and well worth a study by the children.

Geography.—Even the circus parade disguised itself as a geography lesson when a small boy inquired of the class, "Where do all these animals come from, anyway, I'd like to know?" The circus was soon forgotten in the deluge of information concerning animal habitat with which the boy was overwhelmed.

Reading and language lessons.—Descriptive sentences, formulated by the class, concerning the fascinating processes of town building were used for the reading and language lessons.

Number lessons.—A constant demand for measurement in platting the town, in making the buildings, in buying and selling commodities, gave rise to many practical problems of a pertinent character.

Map drawing.—Out of the demand for information regarding the plan for these lessons, maps were drawn and descriptions written by the children for other grades who desired to work out a similar project.

Modeling and making.—Cardboard sloyd played an important part in the building projects. The houses, the shops, and the other public buildings were made of manila paper and cut and pasted to definite measurements.

Blackboard drawing; painting and making colored posters.—Reproductions in blackboard drawing of the town and its special features were used for lessons in chalk modeling. Landscapes of towns were painted and posters were made during the art period.

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Posing and dramatizing.—Stories were told of the building of towns of peculiar construction and origin and of founders of some of the old historic cities, which led to the dramatization of many of the incidents in the story.

Children's initiative.—Henry was just 5, of the right kindergarten age, yet quite mature enough to bear all the responsibilities of the citizenship which had been assumed by the older members of the school community. When the children were fencing their lots, Henry's deft little fingers had finished the front fence and those on either side of his lot before the other pupils had fairly begun. While they were cutting and pasting their tiny pasteboard houses, Henry had finished his and had made in addition a smaller one which he called his "garage." When the houses were all finished and placed in their respective owner's lots—Henry had secured a corner lot of superior location on the opening day—something new and strange occurred each day on his little domain. Some one noticed a pile of toothpicks behind his garage after the fencing was finished and asked him how he had acquired them.

"Well," he explained, "I picked them up around the town after the others had done fencing their lots, and now if you want any more wood, you'll have to buy it from me."

One morning he surprised us with a new line of fence running back from the road through the middle of his lot.

"You see," he announced, "I had a larger lot than I needed, so I fenced off half of mine to sell."

Side lights were thrown upon the child natures within the class which revealed many personalities as interesting as Henry's proved to be. Adjustment to his relationships in home and school communities became easier for each child as he understood their significance through the medium of the play home and school community.

V. A SCHOOL PLAY AS A PROJECT IN HISTORY AND LITERATURE.

A school play which was written and acted by the fifth grade in a large city school is an excellent example of the unifying influence of a project upon a disorganized group of boys and girls in one of the middle grades. The pupils in this group were segregated from the grade because for various reasons they were not fully prepared for fifth-grade work as regards especially the technical subjects. Some project was sought by the teacher in charge which would coordinate the work and at the same time build up a morale within the group of responsibility and determined effort. They were all highly endowed with histrionic ability, which perhaps accounts for their failure in the fundamental subjects which had been taught to them largely in the form of abstract drills. As the play developed they were brought together into complete unity of purpose through their interest in the working out of their project.

The play centers around the historic episode of Roland and Oliver and was taken from one of their lessons in medieval history. Briefly stated, it is this: Charlemagne, the king, becomes estranged from his sister, Bertha, through her marriage with the false knight Milon. He banishes them and they flee to Italy. After their son, Roland, is born Milon deserts Bertha, who is forced to live in great poverty in a hut in the forest near the town of Sutri, where Oliver, the governor's son, resides. A warm friendship springs up between Roland and Oliver and the two boys grow to young manhood in a constant companionship. Oliver protects his friend Roland and his mother from many hardships and often brings them food to stay their hunger.

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ACT II.

SCENE I. *Table on the village green; Charlemagne and knights about it.*

Adelaide. Oh, father, why hast thou sent for this beggar-lad? Do not punish him. Thou hast food to spare.

Charlemagne. I seek the lad for other cause than that he took the food. Last night I dreamed, and it doth trouble me. I fain would know what meaneth it.

Berthaide. Oh, dearest father, tell us of this dream.

Charlemagne. I saw a beggar-lad—a hungry look was in his eyes. They still do haunt me.

SCENE II. *Scene and characters the same.*

Duke Ogier. (*Springing up.*) Ah, here's the rascal who took the food.

Governor. (*Hastily.*) Not so, my lord; 'tis my good son, my Oliver. (*To Oliver.*) How now, my son? What message hast thou? Thy mother, is she ill?

Oliver. Nay, not so, good father. I come to speak for Roland.

Governor. Thou must not come before the king with thy own business. Haste thee away. (*Aside.*) So 'twas the beggar-boy who took the food.

Charlemagne. Nay, let the lad speak. What sayeth he?

Governor. I crave his pardon, my lord. 'Twas his friend who took the food—a beggar-boy whom he doth love most truly.

Charlemagne. Speak out, my lad; what sayest thou?

Oliver. Oh, sire, if thou but knew how poor Roland is, and how his mother suffers! The only food she hath he bringeth her.

Charlemagne. And so he taketh mine. 'Tis wrong to steal, is't not? Hast ever heard it said, "Thou shalt not steal"?

Oliver. (*Sobbing.*) Ah, my lord, but they were starving.

(*Enter Turpin.*)

Turpin. My lord, we have the lad who took the food. 'Twere some excuse; he took it for his mother.

Charlemagne. So thou wouldst beg a gentle sentence for him, my good Turpin? And this boy but now was pleading for him. It seems a beggar-boy can hold a friend.

Turpin. Aye, my lord, he is a goodly lad, and his mother is most sad to look upon.

(*Enter Ganelon and Gerier with Roland.*)

Gerier. Here's the knave, my lord, who hath so far upset this morning's business.

Charlemagne. The lad! the lad! the very lad—'twas he I saw in my dream.

Roland. Most gracious king, I am the lad who took the food. So long, my lord, have we been hungry—so often, sire, have we been starving. Our only home a cave; our only food what Oliver brings. How can I bear my mother's tears? How can I see my mother suffer? 'Twas for her I took the food. I then have eaten none of it.

(*Bertha rushes in.*)

Bertha. I come to plead for my boy, my Roland. Be gentle with him, oh, most gracious emperor. He is noble, he is brave. I pray thee do not harm him.

Charlemagne. My dream! my dream! Do not weep, good woman. Come close and let me see thee.

Bertha. (*As he looks at her.*) Dost thou not know me, Charlemagne? Oh, brother, dost thou not forgive thy sister Bertha?

All. Sister! Bertha!

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SCENE II. *The same. Roland enters with food.*

Roland. Oh, mother, see what I have brought thee.

Bertha. And pray, my son, where didst thou find this food?

Roland. I saw the king's servants carrying it, and I took it.

Bertha. Oh, my son, my son, thou hast done wrong.

Roland. But why should we starve when Charlemagne has plenty?

Bertha. What will Charlemagne say? He will surely banish thee.

Roland. Do not worry, mother. Charlemagne will not harm me.

Bertha. But, oh, Roland, Roland, my boy, Charlemagne hath power; he could take thee from me.

Roland. I am not afraid of that, mother. Nothing shall separate us.

Bertha. Charlemagne can be kind, but he can be very cruel, too. (*Sighs.*)

Roland. Dear mother—didst thou ever know him, mother?

Bertha. Yea, my son, I knew him well in the long ago, in the long ago.

Roland. Oh, mother, why sighest thou?

Bertha. I sigh at the thoughts of long ago when I was happy.

Roland. I would that I were a man, then I could give thee a beautiful home and make thee happy.

(*Enter Oliver.*)

Oliver. Roland, the knights, Charlemagne's knights, are coming for thee.

Bertha. Oh, Roland, I said they would punish thee.

(*Enter knights.*)

Servant. My lord, this is the boy who took the food.

Oliver. Do not harm him. My father shall pay for the food.

Turpin. Nay, not so, young Oliver. The king demands the boy.

Bertha. Oh, Roland, Roland, what shall I do without thee?

Turpin. (*Kindly.*) Good woman, the king may pardon him.

Bertha. Oh, take him not away—I know I shall never see him more.

Ganelon. Come, Turpin; too long we stay; the king awaits us.

Bertha. Oh, good sir, can ye not pity me, can ye not help me?

Gerier. Come, come, the king doth wait. I fain would end this business.

Bertha. How hard ye are to me and mine. Oh, what shall I do without my Roland?

Roland. Can ye not leave me with my mother? Who will care for her when I am gone?

Oliver. I will care for her, gentle Roland; do not fear for her; look to yourself, dear friend.

Roland. How can I leave thee, mother, so sad thou art, dear mother?

Oliver. (*To Turpin.*) Oh, Sir Knight, does not some pity for this poor woman stir thee?

Turpin. Nay, Oliver, thou must not seek to change a king's command; he bade us fetch the boy. We must obey him.

Oliver. Then I must seek my father—surely he will help us, Roland.

Roland. (*As the knights lead him away.*) Farewell, dear mother; do not grieve; I shall see thee soon again.

(*Roland goes off with the knights.*)

Bertha. (*Wringing her hands.*) What will Charlemagne do? How will he punish my noble boy? Oh, if I should dare to tell him who I am it might gain pardon for my Roland. 'Twere better thus to try than to do nothing. I will away to the king.

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3. Language training: The parts, written at home, were submitted to the entire school for criticism, and the best was selected for permanent form. This created much discussion of literary forms and exercise of literary discrimination: (*a*) dialogue; (*b*) dramatic form of expression; and (*c*) analysis of characters and what each might say under certain conditions.

4. Reading: The parts were read by different pupils before the entire school, and the best reader selected by vote to take the part in the play. The effect of these reading exercises was felt in all the oral reading done thereafter by this group.

5. Song: Verses of the song were composed by pupils in the same way.

6. Music: After the verses were decided upon, the music was composed by the same method.

III. *Manual training.*

1. Utility motive: Making of weapons in the sloyd room for use in the play aroused interest and enthusiasm.

2. Educational: It also led to an enthusiastic study of modes of warfare, weapons used, etc.

3. Technical training: (*a*) Spear—long handles of wood painted black and sharp point covered with tin foil; (*b*) shields—large wooden shields painted black with silver cross; (*c*) helmets made of tin, cut and held in form by rivets.

IV. *Ethical.*

1. Cooperation: A disorganized group brought into complete unity through their interest in this play.

2. Altruism: The group selected by vote the best papers for permanent form and all personal preferences were subordinated to the general good. In the same way the prominent characters were selected by popular vote.

3. Ethical lessons: Without doubt the lessons of loyalty and service and filial affection which the play sets forth had its effect upon the individual members of the group, leaving a vivid impression which the ordinary study of historical characters can never do.

4. Color scheme: Act I. The dark forest as a background. Roland in black, Bertha in gray. Act II. Two long tables with ends wide apart at the front of the stage and extending back to meet in the center. Charlemagne seated on a dais at the middle back with flowing white hair and a long white beard, wearing a crimson cloak, an ermine cape, and a gold crown. At his feet sit the two pages in white and green on either corner of the dais. His daughters, one on either side of their father, in pale pink and pale yellow, long veils bound with gold filet. At the outer side of the table on the right are seated the knights in black and silver, at the left the governor in embroidered blue, the cardinal in scarlet, and the lords in white and silver.

Harmony and contrasts of color in costumes: Brown (servants) with white and green (pages); gray (Bertha) and black (Roland) with dull green, embroidered (Oliver); black and silver (knights) with dull blue, embroidered (governor); scarlet (cardinal) with white and silver (lords and dukes).

The Charlemagne group at center back, raised slightly above the others, bring the entire color scheme to a focus at the center of the stage. Crimson and white and gold (Charlemagne); tinted pink and yellow with gold (the daughters); white and green, just below (the pages).

It is difficult to convey an adequate impression of the beauty of this scene both in color and in the flash of movement, the intensity of action and the pathetic appeal of the Emperor's banished sister and her young son, Roland.

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VI. A PROJECT IN HISTORY AND LITERATURE.

A HISTORICAL PAGEANT: THE MAY FESTIVAL.

A SCHOOL PROJECT UNDER THE PERSONAL DIRECTION OF PERCIVAL CHUBB.

(As reported by an eyewitness.)

"The day of our May Festival was warm and bright. Can you imagine a pageant of 600 children marching over the greensward of Central Park, bright in costumes of every land and every time? Quaint Colonial dames and squires, dainty Dresden shepherds and shepherdesses, clowns and mountebanks for the May-day sports? Athletes, with rods and dumb-bells, uniformed in suits of blue, crossbarred with white; Robin Hood and his foresters in woodland green with long-bow and arrows; groups of dancing, singing wood flowers—of tulips, snowdrops, and crocuses? The crowning of the Queen surrounded by her knights and ladies; the winding of the maypole by the Dresden dancers; the feats of skill in games and archery, with all the songs of Maytime ever sung in any springtime; can you imagine anything so lovely as this in the month of May in the heart of our great metropolis?"

How the festival was made ready.—The costumes for this pageant were planned and made by the children during their sewing periods; the Maypole, the bows and arrows, the staves and swords were fashioned in the sloyd room; songs and games were taught by the supervisor of music, and feats of skill by the physical director. History and literature as central subjects; hearing language and reading as modes of attention; gesture, music, making, painting, drawing, speech, and writing as modes of expression, with concentration and coordination throughout its plan and purpose, here was a project worthy the mind of a great master.

PROGRAM.

Processional.

A tucket will announce the starting of the players from the school.

Song of greeting: "Now is the Month of Maying."

Pantomime prologue: The Death of Winter and the Birth of Spring.

Spring's Awakening.

The sleep of the Flowers. Spring summons the powers of the earth and sky to wake the sleeping Flowers. Rains and Winds and the conquering Sun do her bidding, and the Spring Flowers come forth.

Robin song: "Wake! Wake! Children, Wake!"

The Dawn of May Day.

Song: "Wake! Wake! for the Morn of May."

The lads and lasses gather, frolic together, and choose partners to go a-Maying:

"First of May, the Flora Day,
Can you dance the Flora?"

They go forth to the woods and fields to gather garlands.

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Song: "Ye Lads and Lasses."

They return with garlands to the village and perform the rites of purification and invoke the Spirit of Fertility; beating the village bounds; scattering the spirit of prosperity through field and fold, orchard and pasture, streets and houses; decking doors and thresholds; blessing the wells and fountains; and then they unite in a garland dance.

Song: "Arise, Ye Maids!"

The Pageant to the Queen.

A tucket summons the villagers to the market place where they form in procession.

Song: "Come, Ye Young men, Haste Along!"

Progress to the green: Sherwood foresters; the May Queen, her attendants and train; the maypole dancers and peasants; the villagers, swordsmen, and dancers.

Song: "Come, Lasses and Lads."

The Enthronement of the May Queen.

The Lord of the May presents the Lady of the May with the insignia of office: Wreath, crown, and scepter.

Song: "Give to Our Lady o' May."

Homage to the Queen by her followers, including: The Harbingers; the Sun and the Robin; the Garland of the Harvest May or Spirit of Plenty; Spring and the Flower Maids and Heralds; the Queen and the Bearers of her Insignia; Lords and Ladies.

Jack-in-the-Green and the Sweeps; Mother Goose, her faithful bird, and her brood—Boy Blue, Bo Peep, Mistress Mary, Miss Muffet, Simple Simon and the Pieman, the Queen of Hearts, Jack and Jill, Mother Hubbard, Jack Sprat and his Wife, April Fool.

Dance of the Lords and Ladies.

Song: "Hail! Hail! Sweet May!"

Sports and Revels on the Green.

1. Robin Hood and His Sherwood Foresters.

Robin Hood and his companions—Maid Marian, Little John, Fair Eilen, Allen-a-Dale, Will Scarlet, and Friar Tuck—greet the Queen. The Hobby-Horse causes trouble. Robin summons the men and maids of the merry greenwood, who march before the Queen.

Song: "Robin Hood and Little John."

They display their prowess with the bow in an archery exercise; then retire, dancing a woodland May dance.

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Song: "Bow and Arrow Bearing, lo! the Archer."

II. Maypole Rites and Dances.

The peasant dancers bedeck and do honor to the maypole; then dance around it.

Song: "Come, Lassies and Lads."

III. The Fencing Combat and the Tumbling.

Salutation of the Queen by the rival villagers.

Song: "Lavender's Blue, Dilly, Dilly."

The challenge (Orange). The acceptance (Lemon).

The Combat.

The rivals, in token of good-fellowship, give a display of their athletic agility before the Queen in pyramid formations and tumbling. They then greet the maids of the rival villages, who unite in friendly dances—the Morris Dance, the Faithful Shepherd, and the Trenchmore.

Reassembling of Players and Recessional.

Song: "Hail! Hail! Sweet May."

VII. MAKING A GROCERY STORE.

A THIRD-GRADE PROJECT IN SLOYD AND NUMBER.

This was a community project in which each child in the grade had some part. The class visited a grocery store frequently during the process of the work.

They used a dry goods box, 22 inches long, 16 inches wide, and 10 inches deep. It was lined with manila paper and stood upright on one of its longer sides. The shelves, of thin pieces of wood, were fitted to the back of the box in length and were each 2½ inches wide. The lower shelf was 3½ inches from the floor, and they were all 1½ inches apart.

The counter was made by nailing narrow pieces of wood like the shelves into a box measuring 1 foot long, 3 inches high, and 3 inches wide. It was sandpapered to make it smooth.

The showcase, made of small pieces of glass, was fastened together with passe partout paper and looked like a glass box when finished, measuring 3 by 3 by 2 inches.

The balances were made of wood. The upright was a square stick of wood one-half inch on each side and 4 inches high, with a standard nailed to the lower end and a notch out in the upper end. The standard was a square block of wood measuring 2 inches on each side. The beam was a small rod of wood measuring one-eighth inch in diameter. The measures were made of square pieces of manila paper tied at each corner with a string and the strings tied together and tacked onto each end of the beam.

The balances were painted black and were set on the counter. The outside of the box was painted white and the shelves white. Moldings were nailed on

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the front edges of the box and these were painted red. A sign over the store was painted white with a red molding at the top. The grocer's name, Mr. Dooley, by unanimous choice, was painted on the sign in black letters.

Paper cutting and pasting.—Bushel baskets and pails were cut and pasted out of manila paper and drawing paper.

Modeling and water-color painting.—Fruit cans, candy boxes, breakfast-food boxes, candy, flour sacks, cheese, apples, and potatoes were modeled out of clay and painted with appropriate colors.

The cans and boxes were placed on the shelves, the candy in the show case, the cheese on the counter, and the bags of flour and baskets of apples and potatoes were around the counter on the floor. Mr. Dooley and a customer, Mrs. Jones, were modeled in clay and painted. Mr. Dooley stands behind the counter, and Mrs. Jones, with her basket on her arm, is buying her groceries.

Language.—Price lists and names of commodities were written after each visit to a grocery. Orders for groceries were written and delivered to Mr. Dooley, who was impersonated by one of the pupils. Bills were sent out and collected; paper money was made by the class and used in buying and selling.

Reading lessons.—Each step of the work was used as a basis for reading. These were development lessons written on the board by the teacher at the dictation of the class. They were read from the board and copied into their language books. Later they were typed and bound with a series of similar lessons into permanent form and used as a project reader.

VIII. MAKING BREAD IN SCHOOL.

A PROJECT IN COOKING.

There is no project in the elementary school that may be of greater value to the children than lessons in cooking plain, wholesome food. This project on bread making is given here because it has been worked out in primary rooms of first and second grade children many times and never fails to become a valuable lesson both to the pupil and to the family at home. The difficulty of baking bread in an ordinary schoolroom may be overcome if there are gas jets or electric fixtures in the room. Then a gas plate and oven or an electric grill and oven may be borrowed at home by some pupil and brought to school for this lesson. There is always an advantage in having children watch the process of baking which, of course, they miss if the bread is loaned out to bake. The simplest method possible is given in this lesson, in order to remove any difficulty which the teacher might fear in attempting this project.

The teacher gives two pupils 40 cents and sends them to the grocery store to buy flour, milk, and yeast. She asks them to bring back the change and requests the class to figure out how much money will be left when the materials are bought. Have them make out a bill in correct form and compare it with the grocer's bill when the children return from their errand.

To groceries for bread:

4 pounds flour @ $0.06	$0.24
1 cake yeast @ .05	.05
1 pint of milk @ .08	.08
	.37
By cash	.40
Credit	.03

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The teacher can borrow a pan from some one who lives near the schoolhouse, and set the bread overnight. Let the children stir the milk, diluted one-half with water, into the flour, and also add the yeast, dissolved in half a glass of water. A spoonful of salt and a tablespoonful of sugar should be mixed with the flour before the wetting is added. These the children can bring from home.

In the morning the sponge will be ready to knead. Have the children wash their hands carefully, and then give each one a handful of dough, which has been stirred in the pan to a stiff sponge. If possible, have the children stir the dough. The dough can be laid on each desk on a large sheet of drawing paper or some of the children can work around a table if a large one is in the room. (See picture.) If a little flour is first sprinkled on the paper the children will have no difficulty in kneading the bread.

Have the children write their names on long, narrow strips of paper before they begin to knead the bread. When the little loaves are ready for the pan let each child place the strip of paper containing his name under the loaf which he has prepared. The name, written on the upper end of the strip, should be in plain view.

Have ready some biscuit tins, also borrowed, well greased with lard or butter, and have the children lay their loaves of dough in the pans side by side, with the name of each pupil by his loaf. These loaves will be about the size of the rolls which we buy at the bakery.

When the loaves are nearly light and ready for baking send them to some house near the school where you have already made arrangements to have them baked. Any mother of one of the pupils will be glad to add the little tins of school bread to her baking if you arrange to send them over on her baking day.

When the bread is baked and is returned to the school wrap each little loaf in a white paper napkin and send it home by the pupil who made it.

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DEPARTMENT OF THE INTERIOR
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MALNUTRITION AND SCHOOL FEEDING

By

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MALNUTRITION AND SCHOOL FEEDING.

INTRODUCTION.

One of the most conspicuous by-products of the public-school system is a quickened interest in the physical welfare of the school child. Practically the entire population of the Nation between the ages of 5 and 15 is gathered together for from 6 to 10 months of the year into a great community to receive public instruction. This segregation of the youth of the Nation is beset, from the point of view of public health, with advantages and disadvantages. The chief disadvantages are that the close personal contact of so many individuals facilitates the spread of contagious disease and that the educational process itself places a severe physical strain on growing children. The chief advantages are that it facilitates the regulation of health conditions and that it brings to the attention of the proper authorities physically subnormal children who would otherwise remain undiscovered.

Malnutrition is a term used to indicate a general condition of less than normal physical and mental vigor (*25q.*) While the causes of malnutrition are many, incorrect or inadequate diet appears all too often as one of the causes; hence school feeding, which affords not only an opportunity to supplement the home food supply but also to teach correct food habits, becomes a most valuable agency in combating the evil.

This monograph is presented with a desire to aid communities in making school feeding a really effective social agency. In order to determine the true relation between malnutrition and school feeding, we shall first consider briefly the problem of malnutrition and, second, the development and present status of school feeding both in New York City and other communities in relation to this defect.

MALNUTRITION.

Malnutrition has received most careful study in Great Britain; and it is to Great Britain, therefore, that we must turn for the most authoritative and convincing statements on the subject. Nowhere have the difficulties inherent in the problem been more clearly stated than in the report of Sir George Newman, chief medical officer of the board of education of England (*23*):

> Sound nutrition is a general physiological condition which connotes a healthy body in all respects and the good tone and health of its various constituent parts, its brain and nervous system, its muscular, digestive, circulatory, and lymphatic systems. All this means that we must take a wide and comprehensive view of nutrition, which is a state revealing itself in a variety of signs and symptoms. Thus, in endeavoring to estimate a child's nutrition or its opposite (viz, malnutrition), we must think not only of bulk and weight of body, but of ratio of stature to weight; of the general balance and "substance" of the body and of its carriage and bearing; of the firmness of the tissues; of the presence of subcutaneous fat; of the condition and process of the develop-

[1] Reference is made by number (italic) to "Bibliography," p. 38.

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ment of the muscular system; of the condition of the skin and the redness of the mucous membranes; of the nervous and muscular system as expressed in listlessness or alertness, in apathy or keenness; of the condition of the various systems of the body, and, speaking generally, of the relative balance and coordination of the functions of digestion, absorption, and assimilation of food as well as of the excretion of waste products. It is obvious that these are data which are likely to lead to a much more reliable opinion than the consideration of any one factor or ratio, however expeditiously obtained or convenient in form or practice, and these data will demand a wider as well as a more careful and accurate observation of the whole physique of the child. Nor can an ultimate opinion always be formed at one inspection at any given moment. For nutrition, like its reverse, malnutrition, is a process and not an event. In regard to diagnosis, therefore, the school medical officer has as yet neither an absolute standard of nutrition nor a single criterion to guide him. He must form a considered and careful opinion on all the facts before him.

ANTHROPOMETRIC METHOD OF DIAGNOSIS.

The anthropometric method of determining malnutrition is the one most widely used, and in many cases it is used exclusively. Since malnutrition almost invariably manifests itself in retarded growth, and since the child's height and weight may readily be determined with respect to the normal measurements for his years, this method makes a strong appeal to school medical inspectors who have not the necessary time to make thorough examinations, and may even be resorted to by those without medical training. It appears that the child's height is less affected by his nutrition than his weight, and there is, therefore, a strong preference for comparing the child's weight with the normal weight for a child of his height, rather than with the normal weight for his age. Height is to some extent influenced by nutrition, hence children who are much under height for their age ought to be regarded as suspected cases of malnutrition unless there is a known inheritance of small stature.

But deviation from the normal or average rate of growth is not in itself an infallible index of the child's nutrition. Height and weight are determined by heredity factors as well as those of nutrition. The method has value only as a rough sorting out of children apparently in need of nutritional care and is in no sense a substititution for a thorough medical examination where this is possible.

THE GRADING OF NUTRITIONAL DEFECTS.

The defect is relative. Children can not be divided into two mutually exclusive classes, the well nourished and the poorly nourished, for the attempt to do so results in an arbitrary division of border-line cases. Dr. Alister MacKenzie, of Dunfermline, Scotland, has worked out a practical method of classification, known as the "Dunfermline scale." (*18*) According to this scale all children are divided, with respect to their nutrition, into four groups, as follows:

(1) "Excellent" means the nutrition of a healthy child of good social standing.

(2) Children whose nutrition just falls short of this standard are "good."

(3) Children "requiring supervision" are on the border line of serious impairment.

(4) Children "requiring medical treatment" are those whose nutrition is seriously impaired.

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THE EXTENT OF MALNUTRITION.

CONFLICTING DATA.

Since there is in operation no uniform method of diagnosis of the defect of malnutrition, it is not surprising to find a great disparity in the statistics regarding it. Indeed, the estimates of the prevalence of the defect run from 1 per cent to 50 per cent of the school population in communities which are similar in most other respects. One must look with suspicion, therefore, on all estimates or statistics until one has ascertained something of the method of diagnosis and classification. Observers who are relatively inexperienced in dealing with the defect are likely to recognize only the most marked cases; i. e., cases of virtual starvation. The number reported by such observers is, therefore, comparatively small. Under careful and accurate methods of diagnosis, however, which recognize degrees of the defect, a large number is usually called to attention. This is clearly illustrated in the case of New York City. In that city, before the adoption of the Dunfermline scale, the average annual percentage of school children reported by the department of health as undernourished was 4 per cent, while in 1916, the year of the adoption of the Dunfermline method, 15 per cent was reported. As it is unbelievable that malnutrition has actually increased to that extent, we must assume that the apparent increase was due to better methods of diagnosis and classification. It is likely, however, that the proportion of malnutrition found in New York City is fairly indicative of that present in most cities with a large industrial population.

DATA OF CAREFUL OBSERVERS.

At the present stage a rough estimate of the extent of malnutrition based on the reports of those authorities who have been most thorough and careful in their methods and in their grasp of the problem is much more satisfactory than conflicting reports from various localities. In Great Britain, where the grading system is universally in vogue, the percentage of school children who are reported as undernourished runs froom 10 to 30 per cent. In 1912 London reported 9.3 per cent of its children as undernourished, while in 1918 from 4.4 to 7.2 per cent, according to age grouping, were placed in that class. Bradford reported 16.2 per cent of the children attending its schools in 1914 as below normal and of bad nutrition. Dr. Alister MacKenzie reported 33½ per cent for Edinburgh. Dr. S. Josephine Baker, director of the bureau of child hygiene of the New York health department, reported 20 per cent as the proportion of malnutrition among New York City children for the year 1917–18.

Studies of small groups, when conducted with greater care than is usually possible with larger ones, are of great value as an index to the situation in the entire community. Such a study was recently made by the bureau of child hygiene of the department of health of New York City and the New York Association for Improving the Condition of the Poor. It was found that among the 2,585 children examined one-third (33.8 per cent) were undernourished.

ESTIMATES IN THE UNITED STATES.

On the meager data at our disposal it would be hazardous to attempt to estimate the number of children of school age in the entire country who are suffering from malnutrition. In 1904 Robert Hunter, in his book, "Poverty," estimates that there were 3,300,000 undernourished school children in the

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the serving of school meals under proper conditions of educating the children, and through them the family, in food economy and personal hygiene, as well as imparting some of the common amenities of life to those who would otherwise not receive them. The school they regarded as the logical place for carrying on such work.

The public-health interest has developed almost simultaneously with the educational interest. The two points of view have much in common. As investigations show malnutrition to be an important factor in racial degeneration, any proposal which promises to aid in any way in the control of this menace makes a strong appeal to those groups who are chiefly interested in the conservation of human life.

THE ENGLISH MOVEMENT.

Nowhere has school feeding been done on such an extensive scale and nowhere has it been accorded such strong popular approval as in England (4). Since the public elementary schools of England have heretofore been the schools of those too poor to send their children elsewhere, it is not surprising that the malnutrition existing among these children should be closely associated with the poverty of their parents.

School feeding began in England as an emotional response on the part of groups of sympathetic and charitable persons to real suffering among school children. The education act of 1870, which enforced school attendance, was largely responsible for the initiation of the movement. The gathering together of the poor children of the nation in the public schools brought to notice thousands of sickly and emaciated children who would otherwise have remained hidden in the slums of great cities. It was also soon discovered that the strain of school life was more than many of their feeble bodies could bear. A large number of volunteer feeding societies sprang into existence to meet this need. It has been stated on good authority that in 1905 there were 355 separate organizations for school feeding in 146 towns and cities in England.

The work, however, was far from satisfactory. No uniform policy or practice with respect to the character of the meal provided, the charge made to the children, or the method by which certain children were selected for free feeding was followed.

There was, however, almost universal testimony that the effect of such meals, unsatisfactory as they were in many respects, was most marked both in improving the physique of the children and in their school work. At least, a beginning had been made which proved invaluable later when the public demanded a carefully thought out and well-administered system of school feeding. This came early in the present century.

The Boer War did much to bring the issue of malnutrition and school feeding to the forefront. The military authorities found that three out of five who sought to enlist in the army were rejected because of physical disability. This startling fact led to two public inquiries; that of the Royal Commission on Physical Training in Scotland and of the Interdepartmental Committee on Physical Deterioration. Both of these commissions concluded that the apparent deterioration of the race was largely due to malnutrition in childhood. They took the general view that if the nation compels children to attend school, it must also see that they are physically fit to profit by the instruction which is offered them.

The presentation of the reports of these commissions was followed by a series of debates in Parliament as to whether school feeding should be admin-

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istered by the education authorities or by the poor-law authorities, there being apparently no disagreement as to the need of the service or the utter inability of private societies to perform it. The view that school feeding was essentially an educational matter and not one primarily of relief prevailed. In December, 1906, the education (provision of meals) act was passed by Parliament. Scotland was excluded from the provision of the first act but was taken in two years later. The act was predicated on the theory that no child should be deprived of the full value of his education because of lack of food. All undernourished children were to be provided with a school meal, sold at cost to those who could afford it and given free to those who could not.

FRANCE.

School feeding in France antedates that of England. The origin and genius of the movement in France, however, differs materially from that of England. School feeding in France has been more democratic in spirit and empirical in method than in England.

The work in France, as elsewhere, originated in volunteer effort. Early in the history of the public-school system, school funds, *caisses des écoles*, were formed by the residents of various districts to enable needy children to attend school. These *caisses des écoles* were first supported entirely by voluntary contributions, but later subsidies were made to them from the public treasury. Out of these funds, clothing, food, books, and other necessities were provided for indigent school children. By 1880 the *caisses des écoles* had attained such importance that their establishment was made obligatory in all districts.

Naturally an important function of the *caisses* was the provision of food. When the demand warranted it a school lunch or *cantine scolaire* was established by means of these funds. Gradually *cantines* appeared in various districts in Paris and other towns, until, according to the latest reports, they were in operation in 1,400 communes in France and were providing food for 187,000 children.

As the system developed, a larger proportion of meals was served free. In 1882 only 33 per cent of the meals were served free, but in 1898 the proportion of free meals had increased to 63 per cent. In the latter year the municipal subsidy amounted to 1,017,000 francs. For fear that the expenditures would constantly increase, the council restricted the allowance in the following year to 1,000,000 francs.

OTHER EUROPEAN COUNTRIES.

School feeding as performed in England and France is fairly typical of what is found in Europe. A complete narrative of the history of the work in each particular country would, therefore, be simply redundant. Suffice it to say that in Germany, Austria, Holland, Belgium, Switzerland, Italy, Norway, Sweden, and Denmark school feeding has been performed for a generation either by voluntary societies or by municipalities, while Spain and Russia had before the war made beginnings in the movement.

UNITED STATES.

The first penny lunch was started in Philadelphia in 1898 (*3*). It took 10 years, however, for the idea to take hold of the minds of public-health authorities and educators. In 1904 and 1905 Hunter and Spargo called attention to

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the vast amount of underfeeding among school children and pointed to the imperative need of school feeding to cope with the evil. Dr. William H. Maxwell, for many years superintendent of schools in New York City, was an early advocate of the work and repeatedly urged its adoption upon the board of education. His entreaties, however, were not heeded until 1908, when a school lunch was established in two New York schools by the New York school lunch committee.

Opinion in America has from the beginning been adverse to free meals on the ground that such activity tends to pauperize school children and is entirely devoid of any real educational value, but it has rather favored a self-supporting or partially self-supporting lunch for school children. "Penny lunches," as they were called in the early days, were simply intended to make it possible for children to purchase soup, cocoa, and other nourishing foods with the money that they were already spending for trash.

THE PRACTICE OF SCHOOL FEEDING.

EXPERIENCE OF GREAT BRITAIN (4).[1]

The provision of meals act went into effect on December 21, 1906, and was followed by an immediate and remarkable increase in the number of meals served. In 1907–8 there were but 2,751,326 meals provided, while in 1914–15 the number reached 29,560,316. During the war the number of meals served fell off until in 1917–18 only 6,503,140 were served.

The average cost per meal was 2.47d. per meal in 1914, but increased to 5.33d. in 1917, owing to the increase in cost of food and labor. The number of children receiving school meals dropped in 1917 to one-seventh the number fed in 1914. In the latter year the number was unusually large owing to the extended strikes among coal miners and a resultant poverty in the miners' homes.

Where meals are served.—The meal has been served in one of four places: (1) In the school itself; (2) in outside restaurants or eating houses; (3) in centers outside of the school building; and (4) in the homes of the children.

The first place, i. e., the school building, has been least often used except in special schools for defective children or in open-air schools. The conditions existing in the British schools made it difficult to secure satisfactory places within the buildings for the meal service.

In practice the second method, i. e., permitting local restaurants to contract to feed the children, has proved most objectionable of all because the places themselves are frequently insanitary and there is always a tendency for the restaurant keeper to profiteer at the expense of the children.

The most popular places for serving meals have been "centers" or canteens located near the schools. These canteens are under the direct control of the authorities, though this has not always assured satisfactory food or conditions.

In one place, the Borough of Leicester, bread and milk are sent to the homes of necessitous children.

Preparation of food.—The food is prepared either by commercial caterers or directly by the canteen committee through its executive staff. The disadvantages of contracting for this service is that the canteen committee has not adequate control of the conditions under which the food is prepared or the dietary standards of the meals. The contract system is used to a large extent in London, and the Alexander Trust, which prepares most of the food served in the London schools, appears to be rendering excellent service. In Bradford all of the food is prepared by the canteen committees for 10,000 children who are served there daily. Not only is the service prompt and efficient, but the quality of the food is excellent.

[1] Refers to item No. 4 of Bibliography.

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In large towns most of the food is prepared in central kitchens, packed in heat-retaining vessels, and carted to the feeding centers in wagons and motor trucks. Only in the small towns or in large towns where the feeding centers are widely scattered is the individual kitchen plan used. The adoption of the central kitchen plan is urged by the authorities wherever practicable because it makes possible not only the centralized supervision of the cookery and the quality of the food, but also results in considerable economy in labor and overhead expenses.

Time of the meal.—Both theory and practice vary as to the time at which the meal is served. Breakfast, dinner, and supper are each regarded by different authorities as the most satisfactory meal, while some, notably London, provide all three. Of course, the noon dinner is the most popular meal and practically all authorities now provide it. Until 1912 Birmingham, however, served breakfast exclusively. In that year, while it served 370,944 breakfasts, it provided 2,739 dinners as an experiment. By 1916–17 the advantages of the noon meal were so clearly demonstrated that the order was reversed, with 81,153 dinners and 13,273 breakfasts. The usual practice now is to regard breakfast as a supplementary meal to be given only to exceedingly necessitous children in addition to the noon meal.

Vacation.—The custom of providing school meals during vacations soon arose and spread rapidly. The Bradford feeding experiment clearly demonstrated that with the discontinuance of the meals during the vacation the children lost the gains they had made during the feeding period. The experience of other committees corroborated this evidence, with the result that many authorities took the liberty of continuing the service through the vacation season. The practice was finally declared illegal, but this impediment was removed by amending the act in 1914. In 1914–15, the first year after the passage of the amendment, of the 133 authorities providing meals, 108, or 81 per cent, provided vacation meals. In 1916–17, however, when suffering was less acute, only 72 per cent of the authorities provided vacation meals.

The dietary aspects of the meal.—Naturally an important phase of school feeding is the planning of the dietaries so as to provide in the school meal for the deficiency in the child's diet at home. This has both a quantitative and a qualitative aspect. Not only must the child be given a sufficient number of grams of food, producing so many calories, but provision must also be made for balancing the diet so as to compensate for the elements usually lacking in the home diet of the underfed child. English authorities are pretty well agreed that the diet of necessitous children is particularly deficient in proteins and fats. Children of poor or ignorant parents are usually amply provided with starchy foods, such as bread and potatoes, and with sugars, usually in the form of treacle.

The school breakfast there usually consists of oatmeal, treacle, bread, milk, and margarine. The articles are provided in sufficient amount to yield 19.9 grams of protein, 20 of fat, and 600 calories in energy value. There is practically no variety in the breakfast menu either in Bradford or other towns, but there is, of course, considerable variation in the dinner menus. About two-thirds of the dinners have meat for the main course, while a third are "vegetable" dinners. A typical dinner consists of cottage pie, green peas, gravy, and stewed fruit. A dinner of this sort yields 33 grams of protein, 21 grams of fat, and 849 calories.

If supper or "tea" is served, it is usually very simple and consists of bread and margarine and tea with milk. Even this scanty meal provides 19 grams of protein, 18 grams of fat, and 433 calories.

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Where the school feeding work is carefully coordinated with the school medical service, the menus are usually submitted to the medical officer for approval as to their food value. In London the school medical service recently established a standard dinner which it regarded as essential. This standard called for 25 grams of protein and a total caloric value of 750 units for each child. Everywhere the authorities assume that if the meal furnishes the required number of calories and the proper amount of protein, the other elements, carbohydrates, fats, and mineral salts, are present in sufficient quantities.

The selection of the children.—In the selection of children to be fed, two tests are supplied—the physical and the poverty test. According to the physical test a child is selected for the meals if, in the judgment of the school doctor or nurse, he is undernourished, regardless of the economic condition of his parents. According to the poverty test a child is selected for the meals if the investigation of the home reveals the fact that there is insufficient income in the home to provide adequate nutrition for him. Usually the two tests are combined, but there is a great difference in the emphasis which is placed on one or the other test. The chief medical officer, however, is constantly urging the canteen committees to apply both tests, pointing out that the provision of meals is not meant to be merely a form of relief, but to deal with all cases of malnutrition whatever they may be. If the physical test is not applied, many children whose malnutrition is due to the ignorance or apathy of their parents will not be provided with the proper nutrition. Usually in the smaller towns the physical test is applied more rigorously. In Brighton, Hester, and other small towns approximately 50 per cent of the children fed are selected because of poverty, and 50 per cent are selected because of malnutrition alone.

There is still little provision for insuring the attendance on the meals of those children whose malnutrition is not due to poverty. Some authorities, notably Miss M. E. Bulkley (*4*) and the chief medical officer, think that the only way out of this dilemma is to provide free meals for all undernourished children regardless of their economic status. They believe that in this way not only will the meals be a more effective means of dealing with *all* cases of malnutrition, but that invidious and unpleasant distinctions will be avoided and the service put on a wholesale democratic basis.

. *The educational aspect.*—It is generally recognized in Great Britain that the meals should offer a definite contribution to the child's education. This contribution is to be made not only in providing the child with adequate nutrition to keep hm in a physical condition fit to respond to the instruction offered him, but also in imparting to the child the knowledge of the value of wholesome food and of instilling decent habits of eating. In communities where this phase of the work is receiving the most careful attention special teachers and monitors are provided for serving the meal and for keeping order. The tables are spotlessly clean and are frequently provided with tablecloths, flowers, and other amenities. The work is gradually being coordinated with the teaching of domestic science. In some of the smaller schools girls of the cooking classes prepare the lunch for the entire school. The work is carried still further into the homes by inviting the mothers to attend the luncheon with their children, in the hope that proper standards will gradually become a part of the living standards of the family affected by the meals.

EXPERIENCE OF FRANCE IN SCHOOL FEEDING.

Organization.—The administration of school feeding in France is effected through the local school-fund committees (caisses des école). In Paris, for example, there is a school-fund committee for each of the 20 arrondissements. The school-fund committee appoints a canteen committee to supervise the school

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canteens in its district. Beside the members selected from the larger committee, the canteen committee is made up of from 20 to 25 delegates elected by the voluntary subscribers to the school fund from their own ranks. The canteen committee appoints the manager for each canteen, who is held responsible for the purchase and preparation of the food.

While this decentralized plan results in a certain lack of uniformity in standards and methods, the complete autonomy given to the local committees, on the other hand, stimulates a keen interest in the school meals, which is largely responsible for their success. Committee members visit the various feeding centers regularly to inspect the food and service and to see that proper standards are maintained. In this way the canteens in Paris are prevented from becoming merely perfunctory and official.

Character of the meals.—The meal usually takes the form of a noon dinner (*18*), although in a few instances hot soup is provided at the opening of school for needy children. The school medical inspector is frequently charged with the responsibility of supervising the menus to insure the maintenance of proper food standards. Meat is furnished every day for the older children and twice a week for the younger ones. The quantity of meat given to each child varies, according to age, from 40 to 60 grams. The menu usually provides soup, a meat dish, and a vegetable. Desserts are seldom provided and no drink except water.

Service of the meals.—It is in the matter of service that school feeding in France particularly excels that of all other countries. The meals are conducted in a most dignified and attractive manner. An ample service staff is provided to wait on the children, and teachers are placed in charge to preserve order. Most of the teachers take their meals with their children, and their presence has a wholesome effect on the manners of the children. The children are provided with napkins, knives, forks, and spoons, and the tables are kept scrupulously clean. The educational effect, therefore, in raising the general standard of living is significant.

Pay and free meals.—About two-thirds of the children receive this service free. The remaining third pay for the cost of the food, but not for the service or equipment. Despite the fact that so large a proportion of the meals are served free, the "charity" atmosphere so prevalent in the English schools is entirely lacking. This is avoided by an ingenious system of tickets. On entering the room each child passes through a booth where he secures a ticket. Those who can, pay; those who can not are admitted free, but receive a ticket the same as those who pay. The home conditions of the indigent child are then investigated, and if it is found that the parents really can not afford to pay, he is given a ticket each day without further comment. In this way the children are kept in ignorance of those who pay and those who do not.

Financial aspect.—Theoretically the school funds are supported both by private contributions and public subsidy, but as a matter of fact the amount secured by voluntary contribution is almost negligible, less than 2 per cent in most cases. The luncheon sales produce only a slight revenue, since only a third of the children pay for their meals, and since the prices charged simply cover the cost of the food. The city of Paris, before the war, provided annually over $200,000 for the support of school meals. Thus, more than two-thirds of the funds for school meals in Paris are raised through taxation. There is a growing feeling that the collection of the other third through lunch sales and voluntary contributions ought to be entirely abandoned. Many feel that an injustice is wrought in making the one-third pay twice, not only for the food they themselves consume, but for the meals of the others through taxation. It seems probable, therefore, that eventually the whole system of school feeding in France will be free in keeping with the general tendency to socialize all public activities which are concerned with the education of the child.

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AMERICA.

No adequate census has ever been taken of the extent of school feeding in America, but a recent survey of the Bureau of Municipal Research (New York) gives a fair idea of the growth of the movement. In February, 1918, the bureau sent a questionnaire, covering the essential points of school feeding practice, to 131 cities of 50,000 population or over; replies were received from 86 of them. The growth of the work in various cities during the past four or five years is clearly shown in the following table:

Growth of school-lunch service in certain cities with 300,000 population and over.

[Prepared by the Bureau of Municipal Research.]

City.	Period.	Growth.
New York City (Manhattan)	1911-1915	Elementary—9 to 49 schools.
New York City (Brooklyn)	1912-1915	Elementary—4 to 16 schools.
Chicago	1912-1916	Elementary—10 to 28 schools. Intermediate. High—0 to 31 schools.
Philadelphia	1913-1917	Elementary—0 to 16 schools.
St. Louis	1913-1916	Elementary—1 to 5 schools.
Boston	1911-1917	High—18 to 18 schools.
Pittsburgh	1914-1917	High—3 to 7 schools.
Los Angeles	1914-1917	Elementary—7 to 10 schools. Intermediate. High—13 to 16 schools.
San Francisco	1912-1916	High—1 to 3 schools.
New Orleans	1911-1916	Elementary—2 to 10 schools High—3 to 3 schools.
Minneapolis	1911-1916	Elementary—2 to 6 schools. High—5 to 6 schools.

Obviously the high-school pupils fare better in the provision of the school lunch than those of the elementary schools, since 66 of the cities, or 76 per cent of those reporting, provided a lunch for high-school pupils, while only 22 cities, or 25 per cent, provided an elementary-school lunch. The reason for this is not far to seek. The lengthening of the daily high-school session and the shortness of the lunch hour, together with the great distance which most of the children are obliged to travel, make some provision for a substantial luncheon in most cities imperative. On the other hand, the children attending the elementary schools usually live within a few blocks of the school and the full hour allowed for luncheon seems sufficient time to permit them to return to their homes for the noon meal. But from the social point of view there is a greater need for lunches for elementary school children. It is during this period of the child's life that inadequate feeding does most harm and it is then that food habits are formed which cling throughout the life of the individual and impair both his physical and mental efficiency.

Moreover, the fact that the high schools have so far received most attention throws light on the attitude of the American public toward school feeding. Most cities regard school lunches merely as a convenient accessory to the school system and not as a means of putting the child in the proper physical condition to profit by the education which is afforded him or of raising the general standard of living. Indeed, of the 72 cities reporting school lunches, only 5 indicated in their reports that the lunch had been established definitely for the purpose of combating malnutrition.

NEW YORK CITY.

Until January, 1920, lunches in the elementary schools of New York City have been provided entirely by the voluntary societies, the New York and

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Brooklyn school lunch committees. With the opening of the school year, 1919-20, the board of education assumed full responsibility for school lunches in Manhattan and the Bronx, and during the subsequent school year assumed responsibility for the work in all boroughs.

While the board of education has furnished the necessary space for kitchens and lunch rooms and usually equipped them, it assumed no further responsibility for the conduct or success of the service.

A detailed description of school feeding in every community where it is practiced would lead to unnecessary repetition. We shall, therefore, describe in detail the work in only the most representative community, with particular emphasis on the points on which they differ in practice.

The experience of New York City in school feeding covers a dozen years. The work has been developed under the auspicies of two private organizations, the New York and Brooklyn school-lunch committees. In January, 1920, the board of education assumed full responsibility for the work in Manhattan and the Bronx, and in September, 1920, took over the work in Brooklyn as well. It has been the function of the private organizations to demonstrate that school lunches can contribute to the physical and social well-being of the child and to develop methods which could be used by the educational authorities when they were ready to assume what is really their own responsibility.

In private hands, the school-feeding work in New York City grew until in 1917–18 lunches were provided in 58 public schools. In the following year it seemed likely that the city would undertake responsibility for the work, and this consideration, together with the fact that the cost of the service was constantly rising, led the New York school-lunch committee to contract its service to those schools in which the need for the service was most imperative. During that year (1918–19) only 44 schools were served. In September, 1919, the New York school-lunch committee withdrew entirely from the field to facilitate the transfer of the work to the department of education. The inadequacy of the city's appropriation made it possible for the city to serve only 14 schools. The following table indicates the number of schools served with a school lunch in New York City since the beginning of the work:

Manhattan and Bronx.

School year.	Number of schools.	Lunches served.
1912–13	17	222,235
1913–14	17	431,375
1914–15	19	467,983
1915–16	49	800,000
1916–17	34	825,000
1917–18	35	800,000
1918–19	26	595,000
1919–20	14	300,000

Brooklyn and Queens.

School year.	Number of schools.
1912–13	2
1913–14	8
1914–15	13
1915–16	20
1916–17	22
1917–18	18
1918–19	18
1919–20	16

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The service.—In Manhattan and the Bronx the meals are usually served in the indoor playyard. This is admittedly a makeshift. Folding tables and benches are set up by monitors about 10 minutes before the lunch hour. On entering, the children form a line and pass a certain point where they are given trays and spoons by one of the pupil assistants. They then pass the tables where the food is served, select what they want, and pay the required pennies to the cashier, who stands at the end of the line. After the child has made his selection he takes his place at one of the tables, where he eats his luncheon.

Dietary aspects of the meal.—Inasmuch as attendance at the school lunch is voluntary, a prescribed well-balanced meal for each child, however ideal from the point of view of scientific nutrition, is difficult to enforce. Although the children are permitted to select the different portions of food, every effort is made to encourage them to make wise choices. A trained dietitian plans the menus with a view to providing in each portion the highest food value at the lowest possible cost. Racial and religious tastes and prejudices must also be carefully considered in determining the menus offered. The New York committee provided entirely different menus for schools which were predominately Jewish, Irish, and Italian. In Jewish schools only food which complies with the Jewish religion and tradition was offered; in a similar way racial preferences were observed in Italian schools. In schools attended by both Hebrews and Italians, the problem was met by offering in the menu both Italian and Jewish dishes. The department of education at present makes no special provision for racial or religious preference, but serves the same kind of food at all schools.

The following is a typical menu provided by the board of education at the lunch rooms under its jurisdiction:

Menus for week of April 19-23.

Monday: Cocoa, buttered roll, stewed corn, stewed prunes.
Tuesday: Cream of pea soup, peanut and cottage cheese sandwich, brown Betty with lemon sauce, fruit tapioca (apricots or peaches, syrup served on top).
Wednesday: Vegetable soup, baked beans, vanilla cornstarch with chocolate sauce.
Thursday: Lima bean and tomato soup, buttered roll, cream tapioca, rice pudding.
Friday: Cocoa, salmon sandwiches, sliced fruit, and oatmeal cookies.

The main dishes listed above sell for 3 cents. In addition to these articles the child may purchase a slice of bread for 2 cents, a cup of milk for 3 cents, crackers (one sweet and one unsweetened) for 1 cent, and candy (either chocolate or hard candy) for 1 cent. For 10 cents a child is able to buy a wholesome, substantial lunch consisting of three main dishes and a sweet, either a cracker or candy.

The Brooklyn school-lunch committee provides daily a soup, a baked or stewed dish, and a dessert, either in the form of pudding or fruit. Crackers and candy are also sold for 1 and 2 cents. The following is a list of the main dishes served during the past year:

Three cents each: Soups—Yellow split pea, green split pea, cream barley, barley vegetable, white bean, cream lima, lima and rice, lentils, tomatoes and rice, macaroni and tomato.
Three cents each: Vegetables—Baked beans, baked lima and rice, baked lima and macaroni, baked macaroni and cheese, baked macaroni and tomatoes, carrots and green peas.
Two cents each: Desserts—Rice pudding, chocolate pudding, cornstarch pudding, tapioca pudding, baked yellow meal and raisins.
Two cents each: Fruits—Prunes, apricots, peaches, apple sauce.

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Preparation of the food.—In the preparation of the food three plans are followed. In the independent kitchen plan a separate kitchen plant is provided for each school in which a lunch is served. In the group kitchen plan a kitchen is maintained not only for serving the children in that particular school, but in four or five schools in the immediate vicinity. In the central kitchen plan the food is prepared in a large plant and transported to the various associate schools. The central kitchen plan differs from the group kitchen plan in that the kitchen is located outside of the regular school building and serves a larger number of schools. In Brooklyn only the independent kitchen plan is followed.

Both the group kitchen plan and the central kitchen plan involve the problem of transportation. When the group kitchens were first put into operation in New York, the food was transported to the outside centers in pushcarts. With the establishment of the large central kitchen, however, this expedient became obviously inadequate, for it was then necessary to deliver the food in a hot condition to 20 schools within two or three hours. Motor trucks and horse-drawn vehicles, therefore, were installed to transport the food from the large central kitchen to the outside schools.

Is the central kitchen plan economical.—In New York the central kitchen plan was not adopted solely for the purpose of economy. In many schools where a lunch was badly needed it was impossible to prepare the food on the premises, either because there was inadequate space for a kitchen or because the principal objected to cooking in his building. The expedient of preparing the food elsewhere, therefore, was adopted. In order to determine the economy of the centralized plan a study was made of the labor cost of the New York school-lunch committee. The following is the summary of the labor cost under the independent and centralized plan for the years 1917, 1918, and 1919:

A comparison of the weekly pay roll of the New York school-lunch committee for the years 1917, 1918, and 1919.

1917.

Central kitchen.	Number of schools served.	Total weekly pay roll.	Weekly pay roll per school.	Daily pay roll per school.
Public School 95	4	$45.10	$11.27	$2.25
Public School 92	7	77.00	11.00	2.20
Public School 21	5	56.00	11.20	2.24
Public School 94	1	9.00	9.00	1.80
Public School 4, Bronx	1	24.50	24.50	4.90
Public School 90	2	26.50	13.25	2.65
Public School 109	5	66.00	13.20	2.64
Public School 47	3	20.00	6.66	1.33
Public School 48, Bronx	1	38.50	38.50	7.70
Public School 11	5	48.40	9.68	1.93
Total and average	34	403.00	11.85	2.37

1918.

Public School 98E	20	$285.00	$14.25	$2.85
Public School 94	1	15.00	15.00	3.00
Public School 47	3	38.50	12.83	2.56
Public School 4, Bronx	1	32.00	32.00	6.40
Public School 48, Bronx	1	39.00	39.00	7.80
Public School 109	5	69.50	13.90	2.78
Public School 90	2	35.50	17.75	3.55
Total and average	33	515.00	15.61	3.11

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A comparison of the weekly pay roll of the New York school-lunch committee for the years 1917, 1918, and 1919—Continued.

1919.

Central kitchen.	Number of schools served.	Total weekly pay roll.	Weekly pay roll per school.	Daily pay roll per school.
Public School 98E	14	$289.00	$20.64	$4.13
Public School 94	1	25.00	25.00	5.00
Public School 47	3	76.00	25.33	5.06
Public School 4, Bronx	1	57.00	57.00	11.40
Public School 48, Bronx	1	68.00	68.00	13.60
Public School 109	4	111.00	27.50	5.50
Public School 90	2	52.00	26.00	5.20
Total and average	26	678.00	26.00	5.20

To the labor cost of the central kitchens must be added the cost of transportation. For the year 1919, the average daily transportation cost per school was $1.75. The average cost of serving the lunches during 1919 was as follows:

Central kitchen.	Number of units.	Average daily cost.
Public School 98E	14	$5.88
Public School 94	1	5.00
Public School 47	3	6.81
Public School 4, Bronx	1	11.40
Public School 48, Bronx	1	13.60
Public School 109	4	7.25
Public School 90	2	6.95

While the labor cost appears to be about twice as great in the two Bronx schools, the patronage in these schools was from two to three times as great as the average for the other schools and required a proportionately larger staff to handle it. The above figures indicate that the per unit labor cost diminishes with the number of units operated. The large kitchen at Public School 98E, an abandoned public-school building, is by no means used to its full capacity. This kitchen can easily supply food for 50 schools. It is likely, therefore, that with the further extension of the service from this center a real saving in labor cost will be realized.

Is the school lunch self-supporting?—School feeding practice in New York has rigidly adhered to the sound principle that the child should pay for the food he eats. In Manhattan the receipts from the lunches have always covered the cost of the raw food and part of the cost of its preparation. In Brooklyn the service has from the beginning been entirely self-supporting. The following is a summary of the receipts and expenditures for the New York school-lunch committee for the last year of its service (1918–19):

Income.		Expenditures.	
Receipts from lunch sales	$34,794	Food	$25,053
Deficit	27,234	Salaries and wages	28,965
		Transportation	7,132
		Miscellaneous	848
Total	62,028	Total	62,028

The operation entailed a net loss of $27,234 when all the items entering into the service are considered. Receipts, however, covered the cost of the food, with a balance of $9,711 to be applied toward service.

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The following financial statement for the Brooklyn school-lunch committee for the year 1919–20 shows a profit of $1,386.81:

Income.		Expenditures.	
Sale of lunches	$25,505.09	Salaries and wages	$5,839.75
		Food	18,031.76
		Miscellaneous	246.77
		Total	24,118.28
		Profit	1,386.81
			25,505.09

The financial success of the Brooklyn lunch is due to the low labor cost and to the excellent attendance at all of the lunches; both of which factors are largely due to the industry and efficiency of the school-lunch manager. Great economies in labor are effected by the arrangement of the lunch rooms, which is such that only one person is required to prepare and serve the food and take the pennies from the children. In Manhattan, however, the committee has usually been obliged, because of the lack of suitable space, to set up tables in the playground, an arrangement which necessitates at least two workers in most schools. The Brooklyn committee has been able to secure workers at less than the current rate of wages for such service, while the New York committee has paid the prevailing rate for domestic service. For this reason wages are 40 per cent less in Brooklyn than in Manhattan. The financial success or failure of the two committees in the last analysis is a result of policy pursued by each. The New York committee has deliberately chosen schools for its service in which the need appeared great, regardless of the suitability of the building and regardless of the volume of business to be secured. The Brooklyn committee, on the other hand, set out with the deliberate policy of making the lunches self-supporting and has consistently confined its activities to schools which offered suitable facilities and which could insure a good return.

When the board of education planned to take over the lunches in Manhattan it soon recognized that to make the service entirely self-supporting would necessitate charging prices which would exclude from the service many of the children who needed it most. It therefore determined to cover the cost of food with the receipts from the lunch sales and to appropriate city funds to cover entirely the cost of supervision, labor, and equipment. Such a course is amply justified on the grounds that a lunch service, properly administered, is educational, and that the community and not the school child should bear this expense. At this writing a complete statement of the cost of the service under the department of education is not available. The department, however, selected its workers for the most part from the former staff of the New York school-lunch committee and has compensated them at about their former rate.

Provision for necessitous children.—No systematic provision is made for supplying free meals to needy children. The principle has been that if a child's parents can not supply him with the few pennies needed to purchase an adequate school lunch, the mere doling out of a free school lunch is not an adequate remedy for the condition. School-lunch workers have therefore relied on the existing charitable agencies to take care of such families. One organization supplies more than a hundred children daily with free meals. This organization investigates the homes of children who can not pay for their lunches, and if it finds real need a 5 cent meal ticket is provided for each child every school day. Similar arrangements are made by the Brooklyn committee, through the Brooklyn bureau of charities and other agencies.

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Educational aspect.—Under private management it was never possible to make the lunches thoroughly educational, and this fact constituted the strongest argument for placing the full responsibility in the hands of the board of education. The coordination which has now been effected between the department of domestic science and the school-lunch department makes it possible to present to the child, in a practical way, the relation of proper food to health. The menus are planned by the supervisor of cooking classes. The preparation and distribution of the food is directed by the manager of school lunches. The purchase of equipment, food, and supplies is handled by the purchasing agent of the board, the superintendent of supplies. All of these officials are responsible to one of the associate superintendents of schools who coordinates all branches of the work. In many of the schools the mothers are invited to attend the lunches, where one of the domestic science teachers points out to them the value of the particular dishes served and urges them to prepare similar food in the home. In schools in which cooking is taught, the product of the cooking classes is often sold at the lunch counter. This plan enables the girls to cook the quantity required by a family rather than by an individual and is a valuable expedient in enlisting the interest of the children in the school lunch. In talks to the children on the relation of food to hygiene the school-lunch menu for the day is used as the "text." The associate superintendent of schools who is responsible for the school-lunch work is convinced that the lunches will have little permanent value to the community unless they are thoroughly educational and intends that this aspect will be emphasized as the system is developed and extended.

High-school lunches in New York City.—A recent study shows that the school lunch is available for 85 per cent of the high-school pupils of New York City. The service is operated either by a concessionaire or by the general organization of the school. Under the concessionaire system the privilege of serving a lunch in the school building is given to an individual, with no charge for rental or for the initial equipment. Unfortunately, no requirements are made as to the quality of food sold or the prices charged. The system is gradually being discarded and the control of the school lunch placed in the hands of the general organization of the school, made up of teachers and students. The result is that usually better food is served at lower prices and that the profits, if there are any, go to support other student activities rather than to enrich commercial caterers.

Types of administration of high-school lunch service and number of pupils to whom such service is provided.

[Prepared by the Bureau of Municipal Research.]

	Total.	Manhattan.	Bronx.	Brooklyn.	Queens.	Richmond.
General organization	36,693	12,479	.....	21,079	3,135	.....
Concessionaire	19,265	10,256	7,433	.....	396	1,180
No service	9,348	1,572	712	3,861	3,203	.....
Total	65,306	24,307	8,145	24,940	6,734	1,180

Character of the meals.—The prices charged and the quality of the food vary considerably in different schools. In general, the food served at the lunch room operated by the student organization is better in quality and cheaper than in those operated by a concessionaire. The following is a list of the food served at different schools:

Milk, cocoa, muffins, crackers. Soups: (1) Vegetable, (2) tomato, (3) bean, (4) pea. Meats: (1) Beef, (2) ham, (3) croquettes. Fish: (1) Oysters,

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(2) codfish, (3) halibut. Hot dishes: (1) Beans, (2) macaroni, (3) rice, (4) peas, (5) potatoes, (6) corn, (7) tomatoes. Sandwiches: (1) Ham, (2) lettuce, (3) roast beef, (4) hamburger. Salads: (1) Fruit, (2) potato, (3) tuna fish, (4) shrimp. Desserts: Pudding—(1) Rice, (2) chocolate, (3) cornstarch, (4) bread. Custard—(1) Plain, (2) banana, (3) peach. Pies—(1) Chocolate, (2) apple, (3) peach. Sauces—(1) Apple, (2) apricot. Ice cream. Cooked fruits: (1) Baked apples, (2) escalloped. Cakes: (1) Cookies, (2) buns, (3) jelly or jam, (4) gingerbread, (5) short cake. Fruits: (1) Apples, (2) bananas, (3) oranges. Candies.

Prices vary so much in different schools, and in all schools from year to year, that no attempt has been made to cite prices for each article listed above. Soups are usually from 5 to 10 cents; meats, 15 cents or more; and desserts from 5 to 10 cents.

Cost of the meals.—The fact that the concessionaires gladly accept the privilege of operating high-school lunches is in itself ample evidence that the service can at least be self-supporting. Of the high schools reporting to the Bureau of Municipal Research, only one showed a deficit. The following is a financial statement of 10 high-school lunch services. It is interesting to note that in each case the service was operated by the general organization of the school. In such instances the aim is not to make a large profit, as in the case of concessionaires, but to render the very best type of service at the lowest possible cost.

Receipts and expenditures (1916–17) for school-lunch service administration under the general organization of 10 high schools.[1]

[Prepared by the Bureau of Municipal Research.]

High school.	Receipts.	Expenditures.	Deficit or surplus.
Bushwick	$15,113.38	$15,566.18	[2] $452.80
Commerce	8,661.86	8,465.63	195.53
Commercial	19,518.69	18,161.42	1,357.27
DeWitt Clinton	32,760.21	32,733.75	26.46
Erasmus Hall	27,008.13	26,721.97	226.15
Girls	12,426.51	12,209.90	216.61
Julia Richman	15,220.21	14,566.91	653.30
Manual Training	13,933.11	12,844.02	89.09
Richmond Hill	5,110.05	5,018.58	91.47
Bay Ridge	12,586.70	12,577.13	9.57

[1] No report from eastern district, Flushing, Jamaica, Newtown, and New Utrecht.
[2] Deficit.

Educational aspect.—The high-school luncheon ought to be educational in spirit; that is, it ought to instil in the pupils a taste for good and wholesome food and some idea of its economic value. In the Julia Richman High School, particularly, this phase of the work has been well developed. When the luncheon was first undertaken there, a series of food bulletins was prepared and issued daily to the pupils. These bulletins discussed in simple language the fundamental scientific aspects of food and its relation to health of the individual. The school-lunch work in that high school is also coordinated in an interesting way with that of the teaching of domestic science. All of the work of preparing and serving the food, with the exception of the most menial work, is performed by domestic-science pupils.

SCHOOL LUNCHES IN PHILADELPHIA.

Philadelphia has an excellent school-lunch system. For many years school lunches were operated in the elementary schools there by a volunteer organization known as the Home and School League. In 1915 this service was taken over by the board of education and added to the department of high-scho

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lunches, which for several years had served lunches in the high schools. In 1914–15 school lunches were operated in seven schools. The service was extended each year until in 1917 it embraced 25 elementary schools and 16 high schools.

Organization.—The advantage of combining the high and elementary lunch systems is that it enables the director to purchase food and equipment advantageously and to distribute labor and overhead costs economically over the large number of units. At the head of the bureau of school lunches is a director who is responsible for the entire administration and the financial success of the school-lunch system. The city makes no contribution to salaries or office expenses, but has provided much of the initial equipment for the various kitchens and centers. The school-lunch director has been obliged, however, to replace much of the equipment out of the proceeds of the lunches. She is obliged to make the service entirely self-supporting and to pay her own salary and that of her staff from the receipts from the various centers. The service is therefore practically no financial burden to the city. The profits which are made from the service in the high schools are applied to the deficits of the elementary schools.

Lunches in elementary schools—Character of the meal.—Philadelphia has from the beginning served a midmorning lunch to the pupils in the elementary schools. It was found that the morning recess, which begins usually at 10:30 a. m., and lasts a half hour, gives the children an opportunity to purchase inferior foods and candies from neighborhood dealers. Partly for the purpose of counteracting this evil and also to provide a warm, nutritious morning meal for those children who had received either an inadequate breakfast or none at all, the midmorning lunches were established. The following is a list of a few of the dishes offered in the elementary schools: Milk, cocoa, crackers, chocolates, fruits, oatmeal, and jam sandwiches.

Service in the high schools.—The food served in the Philadelphia high schools is of excellent quality and is prepared and served with scrupulous attention to sanitation and cleanliness. The dining rooms are equipped with long stationary tables with swivel seats. The children usually remove the soiled dishes and return them to the lunch counter, a practice which not only results in great saving in the labor costs, but is also an excellent training for the children in cleanliness and order. The service in each high school is under the charge of a trained dietitian, who is, of course, responsible for preparing the menus and supervising the service in general.

Financial aspect.—Except for food, no separate account is kept of the high and elementary lunch systems. It is expected that the elementary school lunches will be operated at a loss, while those of the high school earn a fair profit. The city assumes no financial responsibility for the service other than to equip the lunch rooms. The director of school lunches must, therefore, maintain a self-supporting service. The board of education has not been supplying adequate funds for the replacement of equipment and unless this policy is soon changed the service is seriously threatened. The financial statement for 1919–20 shows $10.467.26 was paid for equipment and repairs. This money was taken out of the profits of the business, with the result that there was actually a deficit of $2,874.22, which was paid out of the bank balance from previous years and from a few small donations. The following statement gives an excellent summary of receipts and expenditures of 1919–20:

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Receipts.

From lunches—high schools	$309,627.68
From lunches—elementary schools	29,806.71
From donations	31.64
From other sources	293.40
Total receipts	339,759.43
Balance June 1, 1919	6,604.94
	346,364.37

Expenditures.

Salaries and wages	$86,892.62
Food, high schools	217,185.10
Food, elementary schools	23,173.81
Laundry and petty expenses	1,985.00
Equipment, replacements	10,467.26
Other expenditures	2,604.82
Total expenditures	342,308.61
Balance in bank June 1, 1920	4,055.76
	346,364.37

While it is not possible to determine exactly the deficit in the elementary schools, the above statement indicates that the receipts in such schools more than covered the cost of the food. The total receipts from elementary schools was $29,806.71, while the expenditures for food was $23,173.81, which leaves a balance of $6,722.90 to be applied toward salaries and wages.

CHICAGO.

Chicago has the most intensive school-lunch system in America. Lunches are served in all high schools, in the Chicago normal schools, and in 60 elementary schools. The board of education assumes full responsibility for the work. Most of the high-school children attend the lunch room for part of their meal at least, and in the elementary school approximately 31,000 children are served daily. The work is under the general direction of the director of special schools, who is assisted by a supervisor of penny lunch rooms.

The food is prepared in each school, since the central kitchen plan has never been undertaken because of the cost of transportation. The lunch is served either at the morning recess (10.30 a. m.) or at noon. The variety of the food served is attested by the following menus selected at random from three schools:

ADAMS.

Monday: Cocoa; sandwiches (sausage, jam, peanut butter, butterine). Tuesday: Tomato and spaghetti soup, with meat stock; cocoa; sandwiches. Friday: Cocoa; pea soup; sandwiches.

CLAY.

Monday: Cocoa and cracker; cheese sandwich; apple butter sandwich. Tuesday: Bean soup; hot frankfurter sandwich; peanut-butter sandwich. Wednesday: Corn or rice soup, with cracker; hot beef-loaf sandwich; apple-butter sandwich. Thursday: Spaghetti soup; veal sandwich; apple-butter sandwich. Friday: Stewed prunes, with raisins and apricots; salmon sandwich; apple-butter or peanut-butter sandwich.

FROEBEL.

Monday: Cocoa; jelly sandwich; rice pudding. Tuesday: Lima beans; soup with vegetables; sausage sandwiches; bread pudding. Wednesday: Split pea

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soup with vegetables; butter sandwich; tapioca pudding. Thursday: Kidney-bean soup; sausage sandwich; spaghetti. Friday: Cocoa; jelly sandwich; graham crackers; chocolate pudding.

DORE.

Monday: Soup, meat stock with rice or barley; meat sandwich, 2 cents; bread and milk (1 slice, one-fourth pint milk), 1 cent; jelly bread. Tuesday: Meat sandwich (sausage), 2 cents; jelly bread; bread and milk; apple sauce (1 portion with bread), 1 cent. Wednesday: Beans; bread and milk; prunes (1 portion with slice of bread), 1 cent; jelly bread. Thursday: Meat sandwich; chocolate pudding (Gumpert's prepared chocolate pudding); bread and milk; jelly bread. Friday: Hot cocoa; bread and milk; jelly bread; pie (lemon cream or fruit).

HAYES.

Monday: Cocoa; cookies; sandwiches (sausage and apple butter). Tuesday: Lima-bean soup; sandwiches; cookies. Wednesday: Macaroni with tomato sauce; stewed prunes; sandwiches; cakes. Thursday: Baked beans; sandwiches. Friday: Cocoa; prunes; cookies; sandwiches.

A better idea of the quality of the food served and its cost can be obtained from a few sample recipes with the caloric value and costs worked out for each. The following are a few typical recipes:

HOLDEN.

Cocoa, 1 pound.
Sugar, 1½ pounds.
Milk (skim), 4 gallons.
Water, 2 gallons.

Cost, $1.35.
Portions, 150.

Calories per portion	68
Bread	63
Total	131

MARSH.

Cocoa, 1½ pounds.
Sugar, 3 pounds.
Milk, three 2-pound cans.
Water, 8 gallons.

Cost, 86 cents.
Portions, 100.

Calories per portion	130
Bread	63
Total	193

HAYES.

Lima beans, 6 pounds.
Snow drift, 1 pound.
Potatoes, 3 pounds.
Flour, 4 pounds.
Onions, 6 pounds.
Celery, 1 stalk.
Water to make 11 gallons.

Cost, $1.56.
Portions, 200.

Calories per portion	99
Bread	63
Total	162

FARREN.

Peas, dried, 12 pounds.
Bacon, 1 pound.
Crackers, 4 pounds.
Water to make 60 quarts.

Cost, $1.92.
Portions, 250.

Calories per portion	119
Bread	63
Total	182

WALSH.

Rolled oats and milk.

Rolled oats, 2 pounds (cooked in fireless cooker over night); served with whole milk and sugar.
Milk (whole), 4 quarts.
Sugar, 1 pound.

Cost, 79 cents.
Portions, 70.
Calories per portion, 95.

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BELL.

Creamed potatoes and peas.

Potatoes, 33 pounds.
Peas, three 20-ounce cans.
Milk (skim), 2 quarts.
Flour, 1 pound.
Butterine, ½ pound.

Cost, $1.80.
Portions, 180.
Calories per portion, 100.

HOLDEN.

Baked beans.

Navy beans, 15 pounds.
Syrup, 1½ pints.
Salt pork, 12 ounces.

Cost, $1.94.
Portions, 360.
Calories per portion, 142.

FROEBEL.

Bread pudding.

Bread, 4½ pounds.
Sugar, ⅔ pound.
Milk (skim), 1 quart.
Raisins, ½ box.
Eggs, 3.
Vanilla, 2 teaspoonfuls.

Cost, 62 cents.
Portions, 65.
Calories per portion, 116.

BELL.

Ginger bread.

Flour, 4 pounds.
Butterine, ⅔ pound.
Sugar, 2 pounds.
Molasses, 4 cups.
Soda, 4 teaspoonfuls.
Cinnamon, 4 teaspoonfuls.
Ginger, 2 teaspoonfuls.
Eggs, 3.
Salt, 1 teaspoonful.

Cost, $1.25.
Portions, 125.
Calories per portion, 121.

It will be noted that the caloric value is a little low for each portion of food. A child selecting a soup with bread and a dessert would receive from 250 to 300 calories, whereas in the New York and Brooklyn lunches he would secure about 350 to 450 calories. This difficulty could easily be overcome by increasing both the price and the size of the portion. Most of the soups cost less than 1 cent a portion; by doubling the portion a more adequate lunch could be provided and at a price which all could pay. By increasing the amount of milk used in the cocoa a much more nourishing portion could be served at a slightly increased cost.

Cost of the service.—The supervisor of penny lunch rooms does not keep a detailed account of expenditures. The board of education pays for the entire cost of labor and equipment. This for the year 1919–20 amounted to about $70,000. The service in the high schools is entirely self-supporting.

BOSTON.

For many years no provision was made for lunches in the elementary schools in Boston. During the war, however, school feeding was undertaken by a voluntary committee as part of the food-conservation work and is still continued. This committee secured from several large butchers the brisket bone and other portions of the beef carcass which prior to that time had not been used for human food but sold for fertilizers and other purposes. By adding a few vegetables this material is used in making a beef soup, which is sold at several of

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the Boston schools for 1 cent. Bread, cocoa, and other foods are also sold at cost price. A large part of the work is performed by volunteers to keep down expenses and thus to aid in extending the service. It is hoped that this effort will be an entering wedge toward securing an adequate school lunch for the children in the elementary schools of Boston.

The high-school lunches in Boston compare favorably with those of any city in the country. The lunches are administered by a private society known as the Women's Educational and Industrial Union. The food is prepared in a large central kitchen plant under ideal conditions and transported to the various schools, where it is served. Provision is made in most of the schools, however, for rewarming the food after it reaches the school. An excellent system of accounting has been installed and the working staff is well organized. The following is a list of the various portions offered for sale:

Soup: Cream of cabbage, beef and rice, vegetable mulligatawny, split pea, lima bean. Sandwiches: Egg sandwich, fruit butter, chopped ham, cheese and pimento, minced tongue, raisin and nut, sardine sandwich, Creole, sliced ham, olive salad. Bread specials: Bran muffins, corn muffins. Hot specials: Creamed carrots and peas, baked beans, vegetable salad, American chop suey, fish hash, samp with tomato and cheese. Dessert or salad: Chocolate bread pudding, wh. cr.; blanc mange, strawberry sauce; apple tapioca, wh. cr.; spiced prune, wh. cr.; coffee jelly, wh. cr. Cake or pie: Fig cream pie, liberty cake, chocolate cream pie, sponge cake. Ice cream: Macaroon, pistachio, pineapple, raspberry, maplenut.

Articles always provided are lettuce and bread and butter, sandwiches, milk, cocoa, custards, plain cake, fruit, and sweet chocolate, apples, bananas, peanut butter and jam in rye rolls.

The high-school service for many years was entirely self-supporting, but since 1917 a slight deficit of from $1,000 to $2,000 annually has been incurred.

ST. LOUIS.

In 1911, the board of education of St. Louis undertook to conduct a lunch service in its schools. It was decided, however, that it was illegal to spend public funds for the purchase of food and the board was obliged to abandon the work. The Penny Lunch Association, a voluntary society, then assumed full responsibility for the service even to equipping the lunch rooms. During the school year 1918–19 lunches were conducted in seven elementary schools. Most of the service except the actual cooking of food is performed by volunteers. The service in the high schools is under the direction of the education authorities and is more than self-sustaining. Lunch is served in six high schools and a normal school. For the school year 1918–19 the board of education reported a profit of $141.70.

LOS ANGELES.

The board of education of Los Angeles has charge of lunch rooms in 9 high schools, 8 intermediate schools and 31 elementary schools. It is estimated that from 450 to 1,800 pupils attend the lunches daily in each of the high schools, from 700 to 1,000 in each of the intermediate schools, and about 120 in each of the elementary schools.

The supervisor of the home economics department directs the lunch work in all schools. In the elementary schools the lunches are managed by the cooking teacher. In the high and intermediate schools the lunches are managed either by the student body association or by a cafeteria director from the home economics department. When the lunch is managed by the student

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body association one of the teachers, not necessarily a teacher of home economics, supervises the work.

The elementary schools selected for the service are those in which the amount of defective nutrition is greatest. The principals and teachers in these schools see that the undernourished children are fed at noon. In urgent cases a lunch of bread or crackers and milk is served at 10 o'clock in addition to the noon meal. The food is usually sold at about cost price, but when the child is unable to pay it is sold below cost or supplied free. The deficit is made up by the Parent-Teacher Association or other philanthropic societies. Children who are supplied with free meals are given work in the home economics department or elsewhere to make them feel that they are not objects of charity.

Cost of the service.—The service in the high and intermediate schools is entirely self-supporting, largely because of the economies effected through cooperative buying on the part of teachers and pupils and because of the service given by the pupils for which food is the only compensation received. The receipts in the elementary schools for 1919–20 were $42,000; the cost of food was "approximately" $30,100.07. There is no complete record of other expenses, but the supervisor states that there "was no surplus."

LOUISVILLE, KY.

Louisville was the first city of the South to establish a school lunch under the management of the school authorities. In 1913, school lunches were begun as a volunteer service. The success of the undertaking encouraged the board of education to equip successively five lunch rooms. In 1916, the board of education assumed full responsibility for the work and established a department of school lunches to administer the service. Since this department has no revenue except the daily receipts from the lunch room, the service must be self-supporting.

The lunch is served in the middle of the forenoon "to supplement an insufficient or faulty breakfast or a breakfast hastily eaten." The menus, which are uniform for all schools, include milk or cocoa, soups, creamed vegetables, sandwiches, fruits, small cakes, and milk chocolate. These articles sell at 2 cents a portion. At the vocational schools, where the luncheon is planned to take the place of the home dinner, the food sells for from 3 to 5 cents a portion.

In the most successful lunch rooms the meal is made a social hour. Each class has its own table, at which the teacher presides as hostess. A spirit of companionship and mutual respect is cultivated which has a most wholesome effect on both teacher and pupil.

OTHER CITIES.

Besides the work in the cities mentioned, school feeding is carried on in Pittsburgh; Cleveland; Cincinnati; Rochester, N. Y.; Houston, Tex.; Mobile; Minneapolis; Indianapolis; Milwaukee; Springfield, Mass.; and many other cities. Since it is obviously impracticable to give a detailed account of the work in each of these cities, important as it is in many cases, the description has been confined to those cities which have developed the work most extensively and is sufficiently varied to cover every type of service now being carried.

RURAL-SCHOOL LUNCH.

It is only recently that the need for a school lunch in rural communities has become apparent. Country children often travel long distances to school and

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are obliged to carry their lunches with them. Instead of milk, vegetables, and fresh eggs, the lunch of the country child of to-day often consists of soggy pancakes, canned foods, and indigestible pies and cakes. The purpose of the rural-school lunch is to encourage the children to bring wholesome foods with them and to prepare hot nourishing dishes from them during the noon hour. The country-school lunch properly conducted thus fills a real educational need. The school lunch is often used as the sole means, and a most practical one, of giving the children a much needed training in home economics. The children are taught not only how to prepare food properly and given some appreciation of the relative value of foods, but also in setting the table and in observing table manners and other social amenities.

The expense of the rural-school lunch is very slight. A storeroom, which is usually already in the schoolhouse, a few cooking utensils, and a store closet are sufficient to equip a school lunch. These are either supplied by the parents of the children or out of the school funds. The children either bring their food with them or pay for the cost of the food, which is purchased at reasonable prices in the neighborhood.

In many States the work is promoted by the extension division of the school of agriculture. Minnesota, Kansas, and Nebraska provide extension courses for training teachers for this work and supply pamphlets and circulars which give practical instruction in providing a school lunch.

SPECIAL FEEDING.

Besides the regular school lunch, special feeding is frequently provided for anemic, tubercular, and badly undernourished children, usually in open-air classes. In England and Germany such children receive their full nutrition at the open-air schools. In America, as a rule, the food supplied is intended only to supplement that which the child receives at home (*15*).

ROCHESTER, N. Y.

In Rochester children of the open-air classes receive their full quota of nutrition in the school. The meals are planned with scientific care in order to insure that the child shall receive the full ration required by him for recovery and growth. The following schedule of the meals supplied in the Rochester classes illustrates how thoroughly the work is done:

MENU.

Breakfast—Oatmeal with sugar and cream; a glass of milk.
Lunch at 11 o'clock—A glass of milk.
Dinner—Pot roast of beef; mashed potatoes; corn; bread and butter; milk; baked apples with cream.
Afternoon lunch—Cocoa and bread.

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Food value of the Rochester daily menu.

BREAKFAST.

Food material.	Amount.	Grams of—			Cost (as of 1916).
		Protein.	Fat.	Carbohydrate.	
Oatmeal, pound	1	113.5	49.6	450.3	$0.075
Milk (whole), quarts	6	180.0	217.2	271.2	.360
Sugar, pound	1	.....	.....	453.6	.070
Total for 30 children	.....	293.5	266.8	1,175.1	.505
Per capita	.....	9.7	8.8	39.1	.017

11 O'CLOCK LUNCH.

Milk for 30 children, quarts	5	150.0	181.0	226.0	$0.300
Per capita	.....	5.0	6.0	7.5	.010

DINNER.

Potatoes (1 peck), pounds	15	121.5	6.0	999.0	$0.325
Beef (rump roast), pounds	7	437.5	641.2	.....	1.120
Corn (canned), cans	3	38.1	16.2	258.3	.300
Apples, peck	1	86.4	120.0	3,507.6	.400
Brown sugar, pound	1	.....	.....	430.0	.066
Milk (whole), quarts	8	240.0	289.6	361.6	.480
Butter, pound	½	3.4	289.1	.....	.300
Bread, loaves	4	166.8	21.6	963.2	.200
Total for 33 individuals	.....	1,093.7	1,383.7	6,609.7	3.191
Per capita	.....	33.1	41.9	200.3	.093

AFTERNOON LUNCH.

Milk (whole), quarts	5	180.0	181.0	226.0	$0.300
Cocoa, can	1	26.6	32.5	42.5	.115
Sugar, pound	½	.....	.....	226.8	.035
Bread, loaves	2	82.1	10.8	481.6	.100
Total for 30 children	.....	287.7	224.3	956.9	.550
Per capita	.....	8.6	7.4	31.9	.018

TOTAL FOR THE DAY.

Per capita	.....	56.4	64.1	278.8	$0.14

It is interesting to compare the total quantity of food provided for each child daily in the Rochester schools with that which is usually deemed essential for the average school child. The following table gives the combined estimate of 15 food experts of the daily food requirement of a child of 10 years of age and average weight and that furnished in the open-air classes:

	Estimated daily requirement.	Amount furnished in open-air classes.
	Grams.	*Grams.*
Protein	60	56.4
Fat	40	64.1
Carbohydrates	250	298.8

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The Rochester menus provide food in excess of the estimated requirement. The average number of children attending open-air classes in Rochester is only 30. One can readily understand that it would be possible to prepare such an elaborate and costly meal for so few children, while to provide such nutrition for hundreds or thousands of children would involve considerable expense and serious problems of policy and administration.

The food for the open-air classes in Rochester is prepared for the most part by the girls of the cooking class under the direction of the domestic science teacher. The advantages of this arrangement are that it offers a splendid opportunity for the children to receive a concrete lesson in providing a well-balanced daily menu for a comparatively small group of children and that they are able to effect considerable economies in labor.

CHICAGO.

The meals provided in Chicago open-air classes are nearly as liberal as those of Rochester. Mr. Sherman Kingsley states that the average daily cost per child for the food in such cases is 11 or 12 cents. The average daily food value is between 1,100 and 1,200 calories. The following typical menus offered for open-air classes in Chicago show that the children would require very little additional food at home:

Morning lunch—Cocoa, bread, jelly. Noon dinner—Browned beef stew, boiled potatoes, mashed turnips, bread, milk, farina pudding.

Morning lunch—Cocoa, bread, jelly. Noon dinner—Browned beef stew, boiled potatoes, potatoes, chocolate pudding.

In the Chicago open-air classes nearly 500 children were provided for. A great deal of attention is given to the educational aspect of the meal in instilling a taste for good food in the children and in urging the parents to provide better food for them at home.

NEW YORK CITY.

Special feeding is provided not only for the children of open-air classes in New York City, but also for crippled children and those suffering from cardiac effects. The type of food offered in each case is practically the same. It consists usually of a light lunch of milk and crackers or cereal and milk at either 10 o'clock in the morning or 2.30 o'clock in the afternoon, or at both times. A hearty noon lunch is provided for a few of the children of the open-air classes by the Brooklyn school-lunch committee and paid for by a philanthropic society. In some cases, the children pay 2 cents a day for the milk and crackers or cereal and crackers, which payment covers the cost of the food. In other instances, however, the food is provided without any cost to the children. Where a regular school-lunch service is provided, the children are naturally urged to attend. There is no way of telling what proportion of the child's nutrition is thus provided. The following is a schedule of the daily routine of open-air classes in New York City, which will give the reader some idea of the way that the feeding is worked in with other activities of the day (*19*): 9 to 10 a. m., school work; 10 to 10.15 a. m., extra feeding; 10.15 to 11 a. m., school work; 11 to 12 noon, rest period; 12 to 1 p. m., lunch period; 1 to 2.45 p. m., school work; 2.45 to 3 p. m., second extra feeding.

Where cereals or hot dishes are provided for the children, a simple kitchen equipment is usually installed, consisting of a small gas stove and a fireless cooker. The food is usually prepared by the teacher, while the children help in the service. The problem of service is very simple. The classes are limited

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to 25 children. Fireless cookers are frequently made by the children in school shops or are presented to the school by friends who are interested in the classes.

LOUISVILLE, KY.

The department of school lunches of the board of education provides a light luncheon in the morning and afternoon and a full lunch at noon for the children in the open-air classes. A trained nurse visits the homes of the children and endeavors to interest the parents in preparing suitable food at home. It is impressed upon the parents that the food which the children receive at school is intended to supplement their regular daily ration and that the work can have no permanent effect without the mothers' cooperation.

ST. LOUIS.

The board of education of St. Louis provides a luncheon service in three open-air schools. One of these schools is a resident school, where 16 children are kept under medical supervision and given their full requirement of food until recovery. At the other schools the children receive a midmorning lunch and a "snack" before going home in the afternoon. Soup, cereal, and milk figure largely in the menus of these lunches. The children receive on the average 1,025 calories a day, at an average cost of 17 cents. The receipts from the children do not cover the cost of the food. The cost of the food in 1919 in the two larger schools was $5,849.98; the receipts from the children were $1,143.47. The deficit was paid entirely by the St. Louis Tuberculosis Society. The resident open-air school is maintained jointly by the board of education and the St. Louis Tuberculosis Association, the latter providing for the feeding of the children.

SCHOOL FEEDING AS A REMEDY FOR DEFECTIVE NUTRITION.

In England, as we have seen, school feeding is practically restricted to undernourished children, and particularly to those whose defective nutrition is due to poverty. The theory is that inadequate food is the primary cause of defective nutrition and that, conversely, an abundance of food is the remedy. School breakfasts and dinners are intended to supply what is lacking in the child's diet, and thus to restore him to normal health. The shortsightedness of this policy is now clear to school medical officers and others who are attempting to secure permanent results through school feeding. The application of the physical rather than the poverty test for selecting the children to be fed, the combination of school feeding with other branches of the school medical service, the development of the educational aspect of the service so that the child's, and through him, the parent's food habits will be permanently improved are suggested reforms which many progressive communities are already adopting.

The aim of the school lunch in America, however, has simply been to provide a warm, nourishing noon meal for children who would not otherwise receive one. No attempt has usually been made to select undernourished children further than to select for the service schools in congested neighborhoods where the amount of defective nutrition is likely to be greatest. Undernourished children are often provided for, as we have seen, through special feeding which is intended to supplement what the child receives at home or at the regular school lunch.

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America has thus escaped the fatal error of regarding the mere provision of food as the sole remedy for defective nutrition. Fortunately, it is a simple matter to coordinate the school lunch or supplementary feeding with other methods of dealing with defective nutrition which are now being developed.

OTHER METHODS OF ATTACKING DEFECTIVE NUTRITION.

THE NUTRITION CLASS.

The nutrition clinics and the classes connected with them were originated by Dr. William R. P. Emerson, of Boston. In the fall of 1908 Dr. Emerson discovered in his hospital and clinic work a large number of "delicate" children of all social classes who failed to respond to most methods of treatment. At that time he made a study of four or five thousand children who were coming to the children's department of the Boston Dispensary. From this group he selected 15 out of the weakest and most poorly nourished group and organized them into a nutrition class, the object being, as he states, "to study every possible detail of their lives, with a hope that such study will explain their condition and that directions of hygiene and diet could be given to the group in much less time and much more effectively than to each one individually." Each child was provided with a small record book and required to state exactly everything he ate during the 48 hours following his initiation into the class and to give "the number of hours spent in sleep, time out of doors, the number of minutes at meals, and such other details as seemed necessary in each particular case." In addition to this record, a record was secured by a social worker who visited the homes of the children and reported on their housing conditions and the standards of hygiene maintained in the home.

In the nutrition class the children assemble in rows before charts labeled with their names, on which are indicated a curve showing the expected gain of the child and a curve showing his actual progress in weight since admission to the class. The display of the charts, which clearly indicates those who are gaining and those who are losing, furnishes an incentive for each child to outdo the other in carrying out faithfully the suggestions made to him for bringing his weight up to the normal expected for his age. The parents of the children are asked to attend the class and to see for themselves the progress which their own children and others are making.

If a child fails to make his expected gain during the week, the nutrition worker questions the child or looks up his record to ascertain the cause. It may be due to his not having taken a sufficient number of calories of food daily, to his failure to have his tonsils removed, to a bad cold, to fast eating or some other infraction of the health rules. The necessity for carrying out the suggestions of the physician or nutrition worker is thus driven home, with the result that at the next session the child has probably carried out his instructions and shows a gratifying gain.

The nutrition class method with various modifications and further development has been widely copied throughout the country by workers who are aroused as to the seriousness of defective nutrition. Nutrition classes are multiplying so rapidly that a brief description of the modifications to the original plan which have been worked out in representative communities must suffice.

NEW YORK CITY.

The New York Association for Improving the Condition of the Poor has found that nutrition work accomplishes most lasting results when it is coordinated with all other agencies dealing with the health of the child (*5*). The nutrition work

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of this association is an integral part of a larger, preventive health program which it is carrying out on an intensive basis in a congested district of 32,000 population. The essential steps in this are prenatal instruction for all expectant mothers in the district, suitable arrangements for the birth of the child, postnatal instruction for the mother, the periodical weighing and complete physical examination of all the children, and immediate attention to the removal of all the defects which the doctor discovers. To do this, in addition to existing facilities, the association employs 15 nurses, 5 dietitians, 1 physician to examine the children and another to examine the pregnant mothers, 3 dentists, and 3 dental hygienists.

Not the least important feature of the examination clinic is that of a feeder for the nutrition workers. It is here that defective nutrition is discovered in its earliest stages before its effects have become permanently fixed and before the habits leading to the condition are firmly established. All cases of defective nutrition discovered by the doctor are at once referred to the nutrition worker for correction.

The children of school age are organized into nutrition classes which meet in the public schools of the neighborhood. The work in the nutrition class is accompanied by visits of the dietitian to the home to give practical instruction to the mother in the preparation of the right kinds of food and in demonstrating to her the benefits of conforming with the suggestions made by the nutrition worker. At first the visits are made once a week, but later every two weeks. One dietitian can take care of 50 children, weighing them weekly, meeting with them once a week in the nutrition class and visiting the homes.

With the children of preschool age the class method is obviously impracticable and the work must be accomplished entirely through work with the mother in the home. Since it is impossible for most of the mothers to bring their little tots to the clinic every week to be weighed and to receive the necessary instruction, the nutrition workers go to them. A portable scale capable of weighing up to 120 pounds has been secured which the nutrition worker can take with her on her weekly visits to the home. The child is weighed in the presence of the mother. A failure to gain gives the worker an effective opening in persuading the mother to carry out the instructions faithfully. For the most part, children with whom the association undertakes to do intensive work are continued for a period of 16 weeks and longer if conditions warrant and if the physician decides it will be helpful. Children are dropped from intensive work when a satisfactory gain has been made for a period of 16 weeks or longer and when the improvement in food and health habits and in the correction of physical defects has been sufficient to require constant supervision. But the child is still kept under observation. The home is revisited about once a month and the child reweighed, and if the child has lost in weight and fallen back into his old habits intensive work is again resumed.

Results.—The record of the gains of three groups of children who received intensive work for 16 weeks is now available. While the period covered is too short and the number of children included too small to speak of with any finality, the results are most encouraging. The first two groups were children of school age, the third of preschool age.

In the first group of 62 children none of the children lost weight, 24 per cent gained but failed to make the normal gain, while 76 per cent gained in excess of normal. The accompanying chart (page 32) indicates that the median gain fell at about 175 per cent of the normal. In other words, the median gain was about 75 per cent in excess of the normal. Moreover, the largest number of children gained from 200 to 225 per cent of the normal, while a few made more than four times the normal gain.

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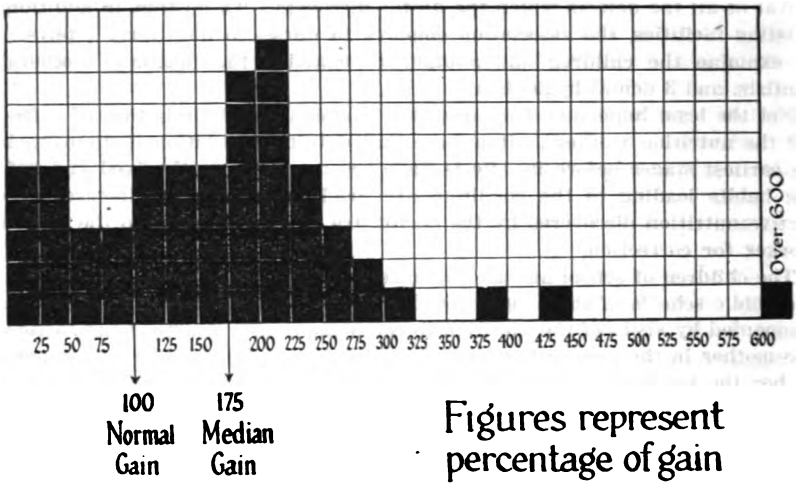
CHART 1.

First Group - 62 Children - 16 Weeks

Each square represents one child

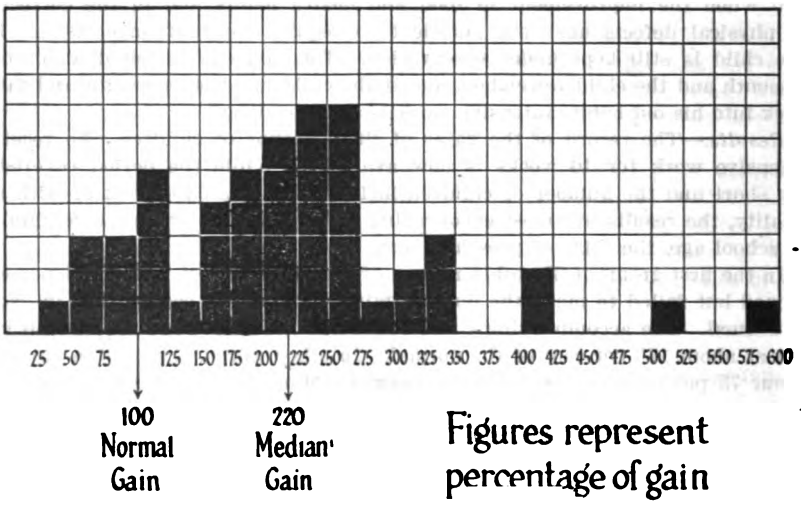


The second group, which was carried at a later period when methods had been more fully developed, made an even better showing. Of this group, consisting of 54 children, none lost weight, 13 per cent gained less than normal, while 87 per cent gained in excess of normal. The median gain for the group fell at 220 per cent of normal, with the greater number falling between the 225 and 275 percentile groups.

CHART 2.

Second Group - 54 Children - 16 Weeks

Each square represents one child



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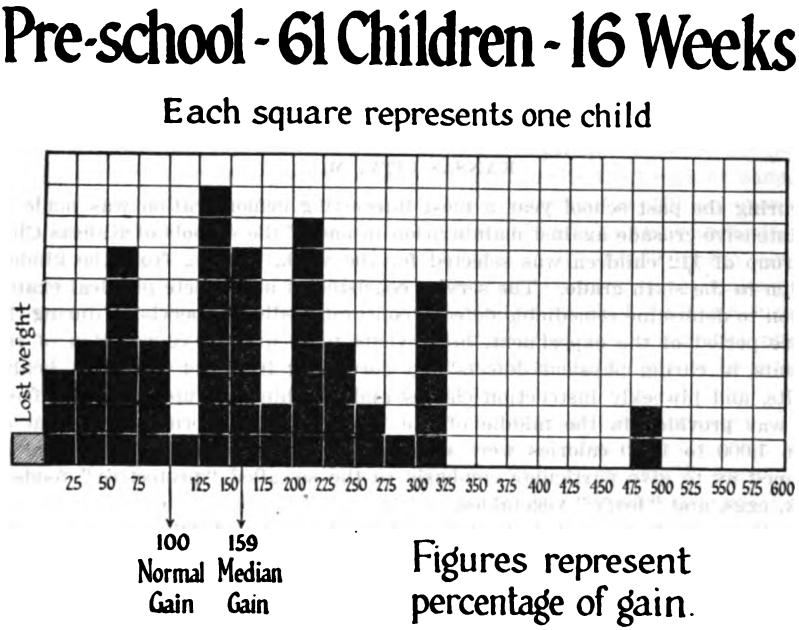
The third group, of 61 children of preschool age, failed to make as good a showing as the other groups because of the difficulties of working with children of this age. The results, however, are far from discouraging. One child lost weight, while 31.1 per cent gained less than normal and 67.2 per cent gained in excess of normal. The median for this group fell at the 159 percentile group.

CHART 3.


Pre-school - 61 Children - 16 Weeks
Each square represents one child
Lost weight
25 50 75 125 150 175 200 225 250 275 300 325 350 375 400 425 450 475 500 525 550 575 600
100 Normal Gain
159 Median Gain
Figures represent percentage of gain.

NUTRITIONAL EDUCATION IN CLINICS FOR CHILDREN.

With the close medical supervision which is possible in children's clinics excellent opportunity is offered for the clearing up of minor physical defects which retard the child's nutrition. When this is done the balance of the work consists in educational supervision to establish proper food and health habits on the part of both children and parents. The following clinics, all connected with large hospitals, provide such care for their children: Bellevue, Post Graduate, Nursery and Child's, and Mount Sinai. The work is either carried on by personal interview with the child on the part of the physician in charge or through nutrition classes and home visiting. For this purpose Bellevue has a staff consisting of a physician who supervises the work and meets the groups of children, a nurse who assists the doctor at the clinic and who visits the homes, and three volunteers who help take histories and relieve the physician and nurse of many details. At Mount Sinai hospital the physician in charge interviews each child personally.

TEACHERS COLLEGE—COLUMBIA UNIVERSITY.

With the further development of nutrition classes and other methods of dealing intensively with defective nutrition there is a growing demand for especially trained workers in this field. Teachers College of Columbia University is anticipating this demand by giving its students in home economics field training in the work of nutrition classes and in home visiting. Dr. Mary Swartz Rose, of the school of household arts of the college, with Miss Emma

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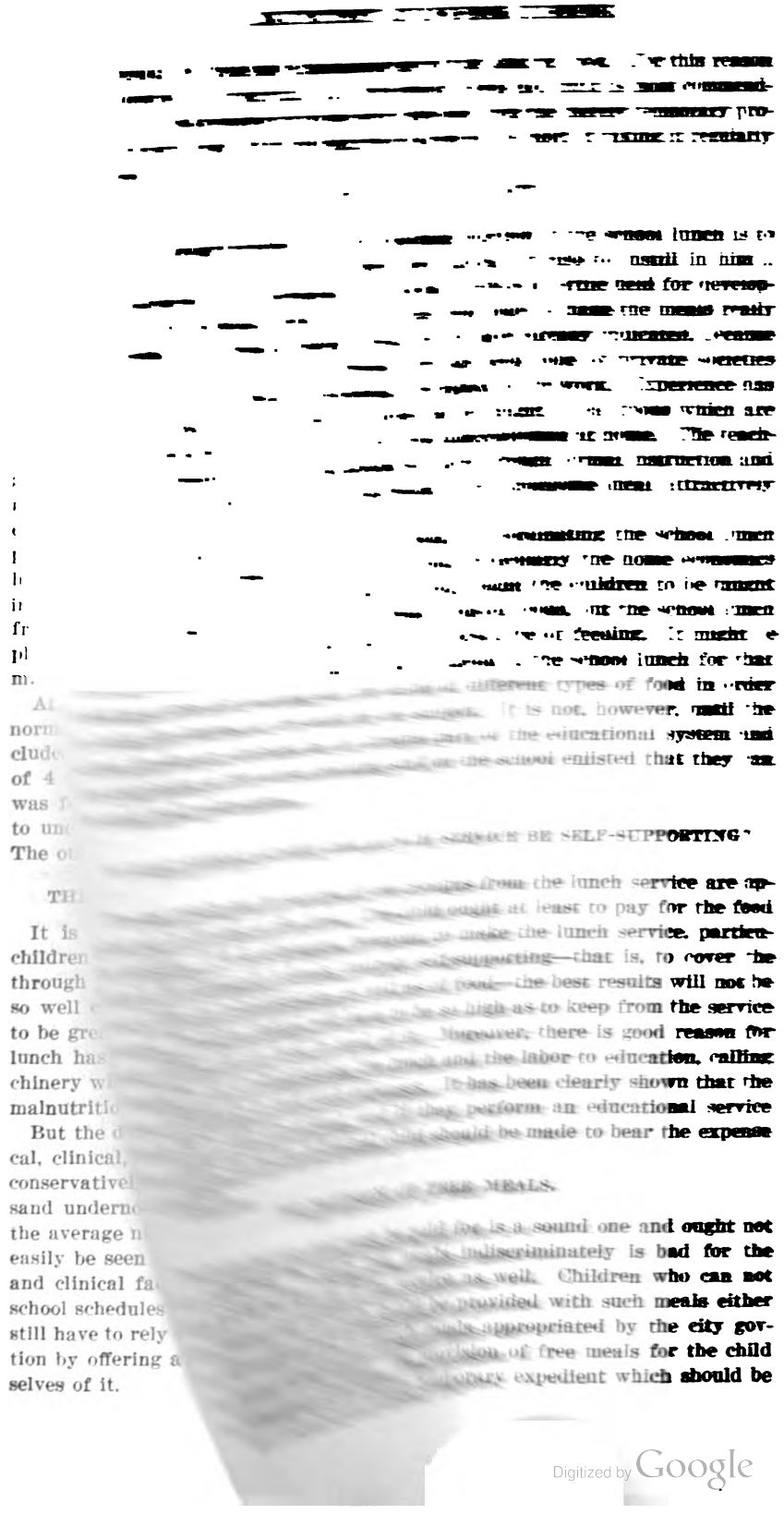

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WHAT TYPE OF SCHOOL FEEDING IS MOST EFFECTIVE?

There are, as we have seen, various theories as to the portion of the child's nutrition which the school meal should provide. In England, where school feeding is still regarded as practically the only antidote for malnutrition, the undernourished child receives the major part of his nutrition from the school meal, while in America he receives from a fourth to a third of his daily ration in the school lunch. It is clear that we ought not to make the mistake of assuming that the child should receive the greater amount of his nutrition in the school. The emphasis should be placed on checking up home conditions so that the family's food standards will be brought up to normal and educating the child to like and to demand adequate and nourishing food. The quantity provided in the school lunch will, therefore, be a compromise between furnishing a hearty meal and a mere snack to assuage temporarily the pangs of hunger.

The question as to when the meals should be served is still an open one. The theory of the midmorning lunch is that the child who receives an inadequate breakfast or none at all must have a light lunch in the middle of the morning to sustain him through the morning school period. Besides, many contend that by supplying a light lunch at this time the undernourished child can increase the total amount of food taken daily without overtaxing his digestive organs. At best, the midmorning meal, however, is a supplementary meal, to be supplied to children whose undernourishment is critical.

It will doubtless be found best to serve a rather ample lunch at noon if only one meal is to be provided. There is a growing feeling that the noon meal should provide a perfect "balanced" ration; that is, it should contain the proper proportion of the various essentials of the child's diet—protein, carbohydrate, fat, and mineral salts. But if the noon meal is to be perfectly "balanced" and to contain a half or a third of the child's daily ration, as many contend, a radical departure from present methods and traditions is essential. The American school lunch has been built up on the theory that the child is to select his luncheon from various portions of food offered for sale. There is, of course, no assurance that the child will select a perfectly "balanced" meal. We have seen that the "balanced" meal can easily be supplied in cases of special feeding where provision is made for supplying an ideal lunch to small groups without cost. If the prescribed luncheon is to be established, the voluntary pay-as-you-go policy must be superseded. To install such a system will involve serious financial considerations, for patronage will undoubtedly fall off when children find that they are required to take a certain meal or none at all. This, however, may be offset by the advantage which would be gained through scientific feeding of at first a limited group, which would be extended later as the advantages of such a meal were impressed on the children.

But even with an à la carte service it is possible to guide the children to some extent in the selection of a properly "balanced" meal. In some cities a child may not purchase a cracker or candy until he has first selected soup, cocoa, or some other substantial dish. Moreover, if care is used in the selection of recipes each portion can provide a fairly well "balanced" ration, particularly if milk is freely used.

"Protective" foods.—The work of McCallum, Osborne, Mendel, and others has demonstrated the importance of milk, eggs, and leafy vegetables because of growth-promoting qualities which they possess and which many other foods rich in carbohydrates, proteins, fat, and mineral salts entirely lack. The school lunch should therefore provide as much of these foods as is practicable. Supplementary feeding which is intended to build up anemic and undernourished chil-

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dren should be made up almost entirely of this kind of food. For this reason the custom of serving milk and crackers or cereal and milk is most commendable. The best results, however, will come not from the merely temporary provision of such food but in getting the children in the habit of taking it regularly at home.

THE EDUCATIONAL ASPECT.

It is constantly claimed that an important function of the school lunch is to educate the child not only in proper food habits, but also to instill in him a consideration of the interests of his fellows. Here is a fertile field for development in school-feeding work, for little has been done to make the meals really educational, the reason probably being, as we have already indicated, because much of the work up to the present time has been done by private societies which had not facilities for developing this aspect of the work. Experience has shown, however, that children in groups can be taught to eat foods which are good for them and to which they have been unaccustomed at home. The teaching in this instance is not accomplished so much through formal instruction and discipline as through the quiet suggestion of a wholesome meal attractively served.

There remains much to be done, however, in coordinating the school lunch with other departments of the public school, particularly the home economics department, in teaching food values. Not only ought the children to be taught in the classroom the value of the different kinds of foods, but the school lunch ought to serve as a concrete example of the best type of feeding. It might be well in such cases for the teacher to use the menu of the school lunch for that week as a basis for pointing out the value of different types of food in order to enlist the interest of the child in the subject. It is not, however, until the school lunches are operated as an integral part of the educational system and the cooperation of the whole teaching staff of the school enlisted that they can be made really educational.

TO WHAT EXTENT OUGHT THE LUNCH SERVICE BE SELF-SUPPORTING?

The best results can be secured if the receipts from the lunch service are applied only to the cost of the food. The child ought at least to pay for the food he consumes. If it is attempted, however, to make the lunch service, particularly in the elementary schools, entirely self-supporting—that is, to cover the cost of labor and administration as well as of food—the best results will not be secured. The prices charged will have to be so high as to keep from the service many children who are most in need of it. Moreover, there is good reason for charging the cost of administering the lunch and the labor to education, calling upon the community to meet such expenses. It has been clearly shown that the lunches can be made educational, and if they perform an educational service the community and not the individual child should be made to bear the expense of this service.

THE PROVISION OF FREE MEALS.

The principle that every meal must be paid for is a sound one and ought not to be departed from. To supply free meals indiscriminately is bad for the children and for the character of the service as well. Children who can not afford to purchase their own meals should be provided with such meals either by private charitable agencies or through funds appropriated by the city government specially for that purpose. The provision of free meals for the child should be regarded only as an extremely temporary expedient which should be

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followed up by close investigation of the home. If such investigation indicates the family is too poor to supply adequate food, the provision of relief should be made directly to the family and not to the child. All that is necessary after all is to insure that no child is deprived of the school meal simply because of the poverty of his parents, but the best social practice indicates that the relief should be made to the family as a unit and not to the child.

THE PUBLIC CONTROL OF SCHOOL FEEDING.

Experience both in Europe and America indicates that school feeding, to be done efficiently, must be placed in the hands of the local educational authorities. We have seen that while school feeding usually has been initiated through private effort, it has almost universally been transferred to public control. It is significant that in all the cities in America where school feeding has been developed at all extensively the work is now done entirely by the board of education. New York, Chicago, and Philadelphia have intrusted this work entirely to the department of education, while Los Angeles, Louisville, and other cities also maintain an extensive lunch service under public control.

The private operation of school lunches fails to achieve the best results because private committees usually lack sufficient funds to extend and maintain the service adequately. Moreover, it is difficult for a private organization to receive the cooperation of the teaching staff, essential to making the school lunches thoroughly educational. Indeed, the private control of school lunches is justified only as an experiment to demonstrate that such work is needed and to discover what are the best methods of organization and administration. Since experimentation of this kind has already been done, it is folly for any community to repeat such experiments.

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The following bibliography makes no attempt at being complete. The author has sought to avoid needless repetitions and overlapping of material and to select only those references which are available to most American readers. For this reason, many interesting contributions published abroad have been omitted both because of the barrier of a foreign tongue and because they are relatively inaccessible. If, however, the reader wishes a more extensive list, it will be found in the nutrition bibliography, compiled by the New York Nutrition Council, which may be secured from the American Red Cross, New York County Chapter, 597 Madison Avenue, New York City, or in the bibliography of school lunches compiled by Miss Lucy Condoll, published by the United States Bureau of Education, Department of the Interior, Washington, D. C., 1916.

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DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

BULLETIN, 1921, No. 38

STANDARDS IN GRADUATE WORK IN EDUCATION

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WASHINGTON
GOVERNMENT PRINTING OFFICE
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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, January 19, 1922.

SIR: The standards and educational practices of all higher institutions are scrutinized now as never before in our history. For the most part these examinations relate chiefly to undergraduate and professional schools and colleges.. It is, however, important that the graduate divisions in our great universities should lead the way with superior requirements and standards for graduate work. In this field the committee on standards of the Society of College Teachers of Education has, under the direction of Prof. Leonard V. Koos, of the University of Minnesota, done some pioneer work by conducting an investigation of the graduate standards and practices in college departments of education. The study reveals valuable information which should be brought to the attention of the higher institutions in this country. I wish, therefore, cordially to recommend the publication of the manuscript as a bulletin of the Bureau of Education.

Respectfully submitted.

JNO. J. TIGERT,
Commissioner.

The SECRETARY OF THE INTERIOR.

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STANDARDS IN GRADUATE WORK IN EDUCATION.

SCOPE AND METHOD OF THE STUDY.

There is reported here a digest of responses to a rather extended inquiry concerning standards in graduate work in education. The lines of investigation were drawn largely from two chief sources, (1) the report of a committee of the American Association of University Professors, and (2) responses of heads of schools and colleges of education to a letter asking for a statement of what seem to them to be the more pressing problems in the standardization of graduate work in the field of education. The former appeared in the January-February (1919) number of the bulletin of the association. It was concerned solely with the doctorate in philosophy, not with the master's degree, and gave consideration to problems of standardization of this degree for the entire range of university work to which it should apply, not merely to the field of education, as does the present study. Through analogy this report supplied important lines of investigation for the study here undertaken. From the responses of the deans and directors of schools and colleges of education were drawn the problems more peculiar to the field under consideration. No item of practice was investigated which was without recognition in the report referred to or in the responses of the deans and directors of whom preliminary inquiry had been made.

The questionnaire framed on the basis of these sources was sent to the heads of departments or schools of education in approximately 90 higher institutions in many parts of the country. This number included all the State universities and other State institutions which might be presumed to be giving graduate training in education, to all the larger non-State higher institutions known as places where graduate training in education is obtainable, besides a number of smaller colleges and universities randomly selected.[1]

In all, 61 of the schools of which inquiry had been made sent answers of one sort or another, some of them stating merely that they gave little or no graduate training, others by returning the questionnaire properly filled out. Most of the responses of the former type came from the randomly selected smaller institutions. Up to the time of completion of the work of tabulation, usable responses had been submitted by representatives of 42 departments, schools, or colleges of education. The blank was in most cases filled out by or under the immediate direction of the head, dean, or director, but in a few instances by some other person informed as to practices and authorized to express the opinions called for. Of these 42 institutions, 17 grant the master's degree only, the remaining 25 granting both the master's and the doctor's degree.

[1] The list from which were drawn the names of the heads of departments and deans to whom questionnaires were sent is that appearing on pages 95–109 of the 1918–19 Educational Directory of the U. S. Bureau of Education, appearing as Bu. of Educ. Bul., 1918, No. 36.

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The names of the institutions represented in the study are as follows: University of Arizona, University of Arkansas, University of California, University of Chicago, Clark University, Columbia University (Teachers College), Cornell University, University of Florida, George Peabody College for Teachers, George Washington University, University of Georgia, Harvard University, University of Illinois, Iowa State College, State University of Iowa, Johns Hopkins University, University of Kansas, Louisiana State University, University of Maine, University of Michigan, University of Minnesota, University of Mississippi, University of Missouri, University of North Carolina, University of North Dakota, Northwestern University, Ohio Wesleyan University, University of Oregon, Pennsylvania State College, University of Pennsylvania, University of Pittsburgh, University of South Dakota, Stanford University, Syracuse University, University of Tennessee, University of Texas, University of Utah, University of Vermont, University of Washington, West Virginia University, University of Wisconsin, and Yale University.

Examination of the list will show that there is a very satisfactory representation of State institutions and of the larger nonpublic universities. In fact, very few institutions important in graduate training in education are absent from the list. But the representation of departments of education in smaller private institutions is rather meager. Their absence must be largely explained by the fact that they undertake little in the way of graduate training. This explanation has the support of a number of answers to this effect from the heads of their departments of education. It is also supported by the fact that most of them failed to respond even to a second request. These facts justify assurance that the study here presented is to be regarded as a fairly complete survey by questionnaire of the practices in and opinions as to graduate training in education in the United States during the school year covered by the study, 1919–20.

For the most part the answers of those who returned the questionnaires were sufficiently full and satisfactory. This was especially true of the reports on *practice*. There was some tendency to fail to respond to the requests for *opinions* as to appropriate practices, except when the individual who filled out the questionnaire was moved to take exception to current practices. As the discovery of this disagreement with practice was after all the thing sought for in the request for opinion, this partial failure to respond to the requests for opinion affects only to a small extent, if at all, the achievement of the purpose of the investigation. Because of this purpose in seeking opinions, no frequent reference is make to them in the report unless they tend to deviate from the trend of practice.

It is not presumed to be the function of this report to do more than to present the facts of practice and opinion. The writer, therefore, restricts himself to their bare and brief recital.[2]

I. ADMISSION AND PREREQUISITES.

SECONDARY-SCHOOL PREPARATION.

Investigation of high-school preparation.—Eighteen institutions state without qualification that they investigate the high-school preparation of graduate students. Twelve others answer to the effect that it is sometimes investigated. Illustrations of statements coming under this head are: "Yes; unless accredited

[2] The committee on standards of the Society of College Teachers of Education, for whom the study here reported has been made, will undertake the task of recommendation of appropriate practices on the basis of the findings presented.

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high school"; "Yes; if college is not accredited." Only 12 of the entire group of 42 institutions answer "No" to the question concerning the investigation of high-school preparation.

Amount of high-school preparation required.—Few of the institutions will accept anything less than four years of high-school work. Few of them accept less than 15 units. The exceptions are the small number that will accept 14 or 14½ units, or insist upon 15½ or 16. Four institutions in one way or another make it clear that they do not insist upon the full four years for the completion of the necessary units, seeming thereby to encourage economy of time for the more capable pupils.

COLLEGE PREPARATION.

The bachelor's degree as a prerequisite to admission.—Almost all institutions insist upon the bachelor's degree based upon four years of work as a prerequisite to admission to graduate work. Three of the entire group of 42 institutions are ready to accept a bachelor's degree secured in less than the traditional four years, thereby seeming to encourage economy of time for more capable students.

Specific requirements other than education.—The next point of inquiry was the extent to which the institutions prescribed specific subjects of study which the student should offer in order to be admitted to graduate work. Of the entire group of 42 institutions, 17 make no specific prescriptions; 20 name prerequisites. The numbers of these subject prescriptions and their names appear in Tables 1 and 2. The former of these tables shows that the number of prescriptions varies widely. The total amount of credit in these prescriptions is not presented in the tables, but it may be said that it also varies widely. In 14 instances of amounts of credit where these could be computed from the answers, they ranged from 3 to 72 semester hours.[8] There are 14 different practices in these 14 cases, showing little or no tendency to standardization of practice.

TABLE 1.—*Number of specific prerequisites other than education.*

Number of prerequisites.	Number of institutions.
0	17
1	5
2	3
3	5
4	2
5	1
6	3
9	1
Miscellaneous answers	3
No answer	2
Total number of institutions	42

The second of these two tables shows the more common prerequisites in the order of their frequency of appearance. A few of the institutions require the presentation by the candidate of majors or minors without prescribing in what subjects these majors and minors shall be.

Investigation of the college work antecedent to graduate training.—There is a great variety of practice as to who investigates this work. In fact, there are 17 different practices reported by the 42 institutions concerned: 9 institu-

[8] Because the semester hour is the unit more commonly used, as far as possible other units of credit have been reduced to semester hours. Where this was not possible, the answers were omitted.

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tions indicate that the dean of the graduate department performs this function; 7 report that it is the work of the graduate committee; 5 that it is done by the head of the department or school of education. Other practices reported with less frequency are university registrar or examiner, the committee on admissions, the committee on relations with other institutions, etc.

TABLE 2.—*Names of specific prerequisites other than education, and their frequency of appearance.*

Prerequisites.	Number of institutions.
Psychology	13
A laboratory science	11
Social studies	10
English	8
Foreign languages	7
Philosophy	5
Hygiene and sanitation	2
Mathematics or logic	2
Public speaking	1
Physical education or military training	1

Practice in this regard may be summed up in another way. A committee has a functional relationship to this investigation in 19 institutions; the dean or head of the graduate school or department in 13 instances; the department of education in 12 instances; and the registrar in 6. There are sometimes two or three of these relationships in one institution.

Of the 42 institutions, 30 report that they use lists of approved higher institutions in evaluating the student's work antecedent to his graduate training. Nine use no such lists.

The more common lists used in this evaluation of college work are the United States Bureau of Education list, lists prepared by the State universities, and the North Central Association list. A number of other lists are named in a few instances, e. g., the Association of American Universities, the Carnegie Foundation, Babcock's, Southern Association, etc. A number of institutions speak of "our own list" or "experience."

Procedure when an institution is not on an approved list.—Some of the wide variation of practice reported in this connection may be cited for illustration: Referring the question of acceptance to the State university in the State in which the college is located for its evaluation of the institution concerned (7); permitting the student to register, subject to the requirement that he show ability (6); considering carefully the individual (3); inspection by a member of the faculty if within the State (3); "our experience" (3). A few of those who responded to the question made comment somewhat as follows: "We should have a national list (of approved higher institutions) made by some recognized authority." These comments and the wide variety of practices in the matter of approving graduate students when coming from institutions on no approved list show a need of standardization of higher institutions over wider than State areas.

PREREQUISITES IN EDUCATION.

Special requirements in education.—Twenty institutions prescribe no specific courses in education preliminary to admission to graduate courses in education. Five make no answer to the question concerning these prerequisites. Seventeen report one or more. The more common subjects reported are shown in Table 3. Table 4 shows the number of courses designated as prerequisites.

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TABLE 3.—*Specific prerequisites in education.*

Subjects.	Number of institutions.
Educational psychology	10
History of education	8
Principles of education	7
General methods	2
Observation and practice	2
Theory and practice	1
Administration	1
Secondary education	1

TABLE 4.—*Number of specific prerequisites in education.*

Number of specific prerequisites.	Number of institutions.
1	5
2	5
3	2
5	3
6	1
"One year of teaching"	1
No prerequisites or no answers	25
Total number of institutions	42

Amounts of credit in specific prescriptions.—When these specified requirements are reduced to semester hours, they vary no less widely than do the subjects or numbers of courses. The totals range from 3 to 32, the most common practice, reported by six institutions, being 12 hours.

The opinions favor a larger amount of undergraduate work in education than does practice. The range is from 5 to 32 hours, with the more common opinion being again 12 hours. Reports from 11 institutions recommend increases of the amounts required in this field, while the report from no institution recommends the reduction of the requirement in operation.

Experience as a substitute for prerequisites in education.—Of the 33 institutions which have prerequisites in education specified or unspecified, 19 report that they do not accept experience in lieu of prerequisites in education, 15 that they do. Of the 42 institutions, 9 have no such prerequisites. Several of the institutions in which experience is accepted in lieu of the prerequisites make such qualifying statements as follow: "For the introductory course only"; "To a limited degree"; "For practice teaching only"; "Sometimes"; etc.

Several of those who answer the questionnaire state emphatically that "experience will not supply ideas," thereby indicating that they very much disapprove of the practice of accepting it in lieu of other prerequisites.

DISTINCTION BETWEEN ADMISSION TO GRADUATE WORK AND ADMISSION TO CANDIDACY FOR ADVANCED DEGREES.

For the master's degree.—Approximately two-thirds of the persons making response to the questionnaire report that a distinction is made between admission to graduate work and admission to candidacy for the master's degree; while about one-third state that no such distinction is made. A number of those who report a practice making no such distinction emphasize the desirability of doing so.

The distinctions made.—An approximate fourth of the institutions make the period of *residence* the distinction between admitting to graduate work and admitting to candidacy for a degree. The remainder either answer "No" or

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fail to respond to this question. Thus, in most institutions there is no distinction in terms of preliminary residence. *Quality of work* is made a basis of distinction between admission to graduate work and admission to candidacy in somewhat less than half the schools. Most of the questionnaires are silent in the matter of other bases for distinction between admission to graduate work and admission to candidacy for the master's degree; they have no bases other than those already named.

For the doctor's degree.—Of the 25 institutions granting the doctor's degree, 20 report that they make some distinction between admission to graduate work and admission to candidacy for this degree. Three report that there is no such distinction.

The distinctions made.—Eleven report that there is a period of residence preliminary to admission to candidacy. Five report that there is not. Most of the institutions are following the practice of insisting upon quality of work as a basis for admission to candidacy. A few of those who report volunteer information as to the grade required, as "B" or some other measure of scholarship. The most common other basis of distinction between admission to graduate work and to candidacy for the doctor's degree is the preliminary examination. Among other bases named are the thesis subject and the foreign-language requirement.

THE ABILITY OF STUDENTS WHO RECEIVE THE HIGHER DEGREE.

The master's degree.—In answer to the question as to whether or not the master's degree is differentiated rigidly from the bachelor's degree as not attainable by persons of mere average ability who give the necessary time, 10 say "No," 27 "Yes," while 5 fail to answer or give answers which are not usable. Opinion favors such a differentiation more strongly than practice.

Doctor's degree.—As may be expected, the reports indicate almost a unanimity of insistence upon rigid differentiation of the doctor's degree from the bachelor's as not attainable by persons of mere average ability who give the necessary time. Twenty-four indicate that they do so differentiate; the remaining 1 of the 25 institutions granting the doctor's degree reports that it does not. Opinion is in no disagreement with these reports of the trend of practice. The candidate is and should be, according to both practice and opinion, a person of more than average ability.

II. RESIDENCE REQUIREMENTS.

MASTER'S DEGREE.

Minimum period of residence during the academic year.—The almost uniform practice is to require a full year of residence if the student attends during the regular academic year from September to June. Two schools report a minimum period of residence of two years.

Obtaining the degree by summer residence only.—Thirty-six institutions report that this degree may be obtained by summer residence only; five that it may not.

Minimum period of residence during summer sessions.—The facts as to the minimum number of weeks of residence required if the student attends only during the summer sessions are reported in Table 5. We find in this table a marked tendency to accept a shorter period of residence during the summer sessions than during the academic year.

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TABLE 5.—*Minimum number of weeks of residence for master's degree when candidates attend summer sessions only.*

Number of weeks.	Number of institutions.
15	1
18	8
24	11
27	1
30	4
32	4
36	4
Degree may not be obtained by summer residence	5
No answer or answer not usable	4
Total number of institutions	42

What is required in lieu of the difference between minima of all-year and summer residence.—In 16 institutions from which we have answers as to what is required in lieu of the difference between summer residence and residence during the academic year, 9 report that nothing is required, while 7 report in some such terms as follows: "Supervised study or projected work in absentia"; "the equivalent of a semester's work in absentia"; "the maturity of the candidate and his ability to do intensive work"; "undetermined as yet."

Opinions as to what should be done in lieu of the difference noted are more in the direction of (1) insisting upon some sort of requirement; or (2) equalizing the periods of residence by requiring longer attendance in summer sessions.

Correspondence study as meeting the requirements for the master's degree.—Of the 42 institutions, 33 report that correspondence work is not accepted in lieu of residence requirements. Seven report that it is so accepted. Opinion is somewhat more inclined than is practice to accept correspondence study as a substitute for residence, but it would insist that the work be "well organized," that it be accepted only to a "limited extent," or "in very small amounts."

Other kinds of work accepted as a substitute for residence.—The majority of institutions refuse to accept any other kind of work as a substitute for residence. Of the 16 institutions which do accept such work, the following kinds are accepted: Field or research work (5 institutions), projected work in absentia (4), extension classes (4), etc.

The effect upon the period of residence when the student does not meet the prerequisites in education.—Of those institutions from which answers have come concerning the effect upon residence of not having met the prerequisites in education, 10 report definitely that it extends the period of residence, and 4 that it may lengthen it, but that it does not always work in this way. Six of the institutions having prerequisites answer that the absence of the prerequisites in the training of the candidate does not result in a longer period of residence. If to these are added those already reported as having no prerequisites and also the portion of the 9 not answering the question in which the failure to present prerequisites may be presumed to have no effect, we are safe in concluding that in a majority of institutions the fact of having had no preliminary work in education does not tend toward extension of the length of residence required for the degree under consideration.

Opinion is more favorable than is practice to an extension of the period of residence if the prerequisites have not been met.

DOCTOR'S DEGREE.

Minimum period of residence during academic year without previous graduate training.—Of the 25 institutions reporting that they grant the doctor's degree, 19 report that they hold to a three-year requirement for ca[illegible]

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without previous graduate training, and 3 each report one-year and two-year requirements.

Obtaining the degree by summer residence only.—In 19 institutions it is impossible for a candidate to receive the doctor's degree by summer residence only. In but 4 institutions may this be accomplished; 1 reports "possibly," while in 2 others there seems to be no rule.

Minimum period of residence during summer session.—Of the 4 institutions from which reports indicate that they accept summer residence as satisfying all residence requirements, 1 reports a minimum requirement of 24 to 30 weeks; 2 a minimum total of 3 years of residence; and one 60 weeks.

The minimum period of residence when the candidate has had graduate training in another institution.—The universal requirement here is a one-year minimum.

Correspondence work in lieu of residence requirements.—Practice is emphatically opposed to acceptance of correspondence work as a substitute for residence requirements for the doctor's degree, reports from 22 institutions stating that it is not accepted. Opinion is to a slight degree more favorably inclined toward granting such credit, but it would insist that, if it is accepted, it be field research in small amount and under careful supervision.

Other kinds of work as substitutes for residence.—Of the 25 institutions granting the doctor's degree, 11 report that no other kinds of work are accepted as substitutes for residence. Another group of the same number of institutions report that research work is sometimes accepted, although some specify that it must be a type of research work requiring absence.

Effect upon period of residence of not meeting the prerequisites in education.—Reports from 5 institutions indicate that the period of residence is extended by the failure to present the prerequisites in education upon entrance to graduate study. Four institutions report that this does not extend the period of residence, three of these stating that there is enough time in the three years to make up the prerequisites. When to these are added the 9 others having no prerequisites, it is apparent that the predominant practice in this regard results in no extension of the period of residence.

III. CREDIT REQUIREMENTS.

MASTER'S DEGREE.

Table 6 presents the number of semester hours of credit required for the master's degree. The amount of credit required may be seen to vary widely and seems to be considerably influenced by the value placed upon the thesis, one of the almost universal requirements for the master's degree. The table also indicates that a few institutions do not specify graduate requirements in terms of formal credits.

TABLE 6.—*Semester hours of credit required for the master's degree.*

Number of semester hours.	Number of institutions.
20	1
24	5
26	1
28	1
30	8
32	8
35	1

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Number of semester hours.	Number of institutions.
9 to 12 and thesis	1
18 and thesis	1
24 and thesis	[1] 5
30 and thesis	[2] 3
32 and thesis	1
Requirement not stated in units of credit	4
No answer or answer not usable	7
Total number of institutions	42

DOCTOR'S DEGREE.

Not many institutions specify requirements for the doctor's degree in terms of credit hours. Six in which requirements are so stated report 48 hours (1 institution), 54 hours (1), 60 hours (2), 64 hours (1), 90 hours (1). One institution each reports the following practices: "24 and the thesis," "30 and the thesis," and "60 and the thesis." It is the more common practice for the institutions granting the doctor's degree to state that the requirements for this degree are not stated in units or hours. A few of those who volunteer an opinion state that the character and quality of the work and the dissertation should be the determining factors, rather than the amount of credit.

IV. THE DISTRIBUTION OF WORK.

ORGANIZATION OF THE WORK IN EDUCATION.

An item of some significance in a study of the requirements for higher degrees in education is the practice in the matter of organization of work in the field. Therefore, one point of inquiry was whether or not the work in education is organized by departments. Thirteen copies of the questionnaire report that education is so organized. Twice this number make a negative answer.

The departments more commonly named by those who report having an organization of the former sort are as follows: Educational psychology (10 institutions), administration (7), history of education (6), secondary education (5), vocational or industrial education (5), rural education (5), health education or educational hygiene (4), elementary education (4), and a scattering of a wide array of departments, among them philosophy of education, educational sociology, normal-school education, religious education, kindergarten education, agricultural education, art education, etc.

Lines of graduate specialization.—Another point of inquiry that may be seen to be somewhat related to the problem of organization is the number and kinds of lines of graduate specialization open to students. The facts concerning this are presented in Tables 7 and 8.

MASTER'S DEGREE.

The number of majors and minors required.—Table 9 shows the practices as to the number of major and minor subjects required for the master's degree in the institutions represented by those who answered the questionnaire. There is seen to be a wide variety of practice in this regard.

[1] One of these reports "24 and thesis or its equivalent."
[2] One of these reports "28 and thesis or its equivalent."

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TABLE 7.—*Lines of graduate specialization within the field of education.*

Line of specialization.	Number of institutions.
Administration	19
Educational psychology	17
History of education	16
Secondary education	12
Elementary education	7
Vocational education	6
"Education"[1]	5
Supervision	5
Tests and measurements	5
Experimental education	4
Theory	4
Philosophy of education	2
Educational sociology	2
Rural education	2
Religious education	2
Principles of education	2
Methods	2
Normal school education	1
Higher education	1
Primary education	1
Kindergarten education	1
Play and recreation	1
Practical arts education	1
Others	9

[1] It is not unlikely that those who gave this answer misunderstood the question.

TABLE 8.—*Number of different lines of graduate specialization within the field of education.*

Number of lines of specialization.	Number of institutions.
1	8
2	4
3	7
4	4
5	5
6	1
8	5
11	1
No answer	7
Total number of institutions	42

TABLE 9.—*Number of major and minor subjects required for the master's degree.*

Number of majors and minors.	Number of institutions.
One major only	12
One major and one minor	9
One major and one or two minors	4
One major and two minors	1
One or two majors and two minors	1
"Varies"	1
Work not arranged by majors and minors	2
No answer or answer not usable	12
Total number of institutions	42

When we come to study the amounts of credit required in these majors and minors we find an even greater variety of practice. For 29 institutions making responses with any degree of definiteness there are 25 different practices. There is thus little or no standardization of practice in this regard. As far as possible, a comparative study was made of the amounts of credit required in the major when no minor is required and when minors are required. No marked difference was found, except that a few of the institutions requiring a major only require a considerably larger amount of credit in that major. In

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cases where no minor is required, the majors range from 10 to 36 hours, with very few above 20. Where minors are required, the majors range from 10 to 21 hours. The number of institutions whose responses could be used for the comparison was too small to give findings of much significance.

Departments from which majors and minors are accepted.—The following are the more common departments in education from which majors are accepted: Administration, educational psychology, history of education, secondary education, elementary education, and rural education. Other departments are reported by one or two institutions each.

The situation as to departments in which minors are accepted differs in no essential respect from what has been reported for majors.

Specialization within the field of education.—Almost three-fourths of those who report, i. e., 30 of the total of 42, signify that specialization within the field of education, e. g., in educational psychology, administration, etc., is *encouraged;* 4 report that it is not, while 3 say that it is "permitted" or "not discouraged."

There is not as marked a tendency to *require* specialization within the field of education, as only 15 indicate unequivocally that this practice is followed, while 19 indicate that it is not.

DOCTOR'S DEGREE.

Number of majors and minors.—The outstanding practice is to require a major and two minors for the doctor's degree, as 10 of the 25 institutions giving this degree make this the requirement. Other practices followed in three of four institutions each are: One major and one minor; one major and one or two minors; one major only.

Departments from which majors and minors are accepted.—In those institutions in which education is organized by departments, the following departments are named as those in which majors are more commonly accepted: Educational psychology, administration, secondary education, elementary education, rural education, and history of education. The following are among the departments which come in for occasional mention: Philosophy of education, health education, primary education, kindergarten education, educational sociology, vocational education, religious education, etc. The facts as to departments from which minors are accepted are nowise different from those just presented for majors.

Restrictions as to distribution of majors and minors.—Of the group of 25 institutions, 7 granting the doctor's degree in education state that there are no restrictions as to the distribution of majors and minors. Typical statements of those who place restrictions are: "Must take one-half or two-thirds of work in philosophy, psychology, and social lines"; "major and one minor must be in related fields"; "the distribution of the minors is at the discretion of the education faculty"; "one minor must be outside the main field, one may be inside." Most of the restrictions are in the direction of making for the unity of the fields covered by the student during his graduate training.

Specialization within the field of education.—Of the group of 25 institutions, 17 granting the doctor's degree in education report that specialization within the field of education is encouraged. Two additional institutions say that specialization is restricted to the research of the student. Two reply that specialization is not encouraged. Eleven of the reports indicate that specialization is *required;* six, that it is not required, the remainder making no answer.

As a whole, specialization is more frequently favored both by practice and opinion for the doctor's degree than for the master's.

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AMOUNT OF WORK THAT MAY BE CARRIED.

The maximum amount of credit that may be earned in any one semester or quarter.—The maximum amount of credit in number of credit hours which may be earned in any quarter or semester by graduate students ranges from 12 to 20. The more common practices followed by 9 and 8 institutions, respectively, are 12 and 18 hours. Occasionally an institution allows a student to carry as much as 19 or 20 hours, but it is more common to find the practice less than 18 hours. The value of these figures in the determination of the trend of practice is to some extent discounted by the fact that some institutions make the thesis a requirement over and above the maximum of course work, the number of these cases not being exactly determinable from the answers given. In most instances, however, the work on the thesis is included as a part of the number of hours the student is permitted to carry.

Unfortunately, also, the question of the amount of work that may be carried by students during summer sessions was not raised. This question deserves some consideration in any attempt to standardize graduate work. As those acquainted with practices in summer schools are aware, the amount of work that may be carried by students in attendance upon them often exceeds that which may be carried during the sessions of the regular academic year.

V. ADMINISTRATION OF COURSES IN EDUCATION.

NUMBERS OF COURSES OF THE DIFFERENT GRADES.

Number of strictly graduate courses.—The numbers of strictly graduate courses reported by these schools and departments of education are shown in Table 10. For those making usable responses, these numbers may be seen to range from none—the most common practice—to 20, with a scattered distribution of responses between these extremes. When these numbers are tabulated for the 25 schools granting the doctor's degree, the range may be seen to be just as wide, but with fewer distributed to the smaller numbers. Those schools having the smaller numbers are appropriately those which limit themselves to granting the master's degree. However, it may be said that there are a number of schools undertaking to grant the doctor's degree which have a meager offering of strictly graduate courses.

TABLE 10.—*Number of strictly graduate courses offered.*

Number of courses.	Number of institutions (of the total of 42).	Number of institutions granting master's degree only.	Number of institutions granting both master's and doctor's degrees.
0	8	7	1
1	4	3	1
2	3	2	1
3	1	1	.....
4	2	1	1
5	3	1	2
6	2	.....	2
7	1	.....	1
8	4	.....	4
9	1	.....	1
14	1	.....	1
15	2	.....	2
20	1	.....	1
No answer or answer not usable	9	2	7
Total number of institutions	42	17	25

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The number of courses open to both graduates and undergraduates is shown in Table 11. For purposes of comparison of the institutions granting both degrees and those granting only the master's degree, the numbers of courses have been separately tabulated.

It was found that in 8 schools no courses are open to undergraduates only. The conclusion that may be drawn is that there is no undergraduate course in these institutions to which graduate students are not admitted for credit.

The numbers of both (1) strictly graduate and (2) graduate and undergraduate courses is presented in Table 12, with the same effort at distinction between the institutions granting both the degrees and those granting the master's degree only.

The distinctions between strictly graduate and strictly undergraduate courses.—As 8 institutions of the entire group of 42 report that they have no strictly graduate courses, these made no response to the question concerning such distinctions. Three additional institutions report that no distinctions are made between these two grades of courses, while five more fail to answer or make answers not pertinent. The trend of distinction in the 24 institutions whose representatives specify one or more distinctions may be characterized by quotation: "More research in graduate courses"; "more seminar work"; "a more critical type of work"; "more largely independent work and individual instruction"; "more outside reading"; "the difficulty and scope of material and degree of advancement"; etc. The more common distinctions are the first two named.

TABLE 11.—*Number of courses offered which are open to both graduates and undergraduates.*

Number of courses.	Number of institutions granting master's degree only.	Number of institutions granting both master's and doctor's degrees.
0	1	
3	2	
4	1	
5		2
6	2	2
8	1	1
9	2	
10	1	1
11		1
13	1	1
14		1
15	1	1
17	1	1
19	1	
20	1	
32		1
35		1
40		1
46		1
85		1
93		1
No answer or answer not usable	2	8
Total number of institutions	17	25

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TABLE 12.—*Total number of strictly graduate courses and courses open to both graduates and undergraduates (i. e., the total offering to graduate students).*

Number of courses.	Number of institutions granting master's degree only.	Number of institutions granting both master's and doctor's degrees.
3	1	
4	1	
6	2	1
9	2	1
10	1	
11	1	1
12	1	
14		1
15	2	1
18	1	1
19		1
20		3
28	1	1
32		1
40		1
46		1
55		1
60		1
No answer or answer not usable	4	9
Total number of institutions	17	25

Distinctions in courses open to both graduate and undergraduate students.—The distinctions in requirements between the two groups of students in courses which are open to both graduates and undergraduates are, in the order of frequency of mention, as follows: Additional work required of graduates (9 institutions); more research (7); more reports (6); higher quality expected (6); greater amount of written work (5); wider reading (4). The reports from some institutions give as many as two or three of these distinctions. The answers from 11 institutions indicate that no distinctions are made in these courses between graduate and undergraduate students.

The proportion of courses open to both graduates and undergraduates that may be taken by candidates for the master's degree.—Practically half the reports from the institutions indicate that no restrictions are placed upon the proportion of courses open to both graduates and undergraduates which a candidate may offer for the master's degree. If to these are added the 8 institutions giving no strictly graduate courses in education, we have almost three-fourths of the entire group of 42 institutions not insisting upon any strictly graduate courses. Ten institutions have such restrictions. Five of these report that one-half of the student's work must be in strictly graduate courses; two, all of the work; and three others specify certain strictly graduate courses in the requirement for the degree.

The proportion of courses open to both graduate and undergraduate students which may be taken by the candidate for the doctor's degree.—Of the 25 institutions granting the doctor's degree, 12 report no such restriction as is referred to here. Only 4 of these institutions insist upon a definite amount, 1 of them asking for one-third, 1 for one-half, and 2 for all work in strictly graduate courses.

Size of classes to which graduate students are admitted.—A relatively small proportion of the institutions place limits on the size of classes to which graduate students are admitted. Thirty-four institutions have no such restrictions. Five in which there are such restrictions report maximum graduate classes of 8–10,

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8–20, 15, 25, 30. It should be stated, however, that a large proportion having no such restrictions point out that in their institutions there is no need for a limit, since the number of graduate students is small in any event.

Nor is there a notable tendency to place limits on the size of such classes in *summer sessions*. Here opinion is more definitely formed, inasmuch as a larger proportion than follow such a practice recommend a limit for classes in education for summer sessions. Among the voluntary statements touching this recommendation are the following: "Especially necessary in summer," "a great abuse here in some famous summer schools."

VI. THESIS.

MASTER'S DEGREE.

The thesis as a requirement.—Almost all schools report the thesis as a requirement for the master's degree. Three institutions respond as follows: "Alternative with the seminary"; "provided, but may be substituted for"; and "may be excused." In only 8 additional schools is there no requirement of a thesis.

Amount of credit for the master's thesis.—There is a great variety of practice in this connection. Five institutions which require a thesis allow no credit for it, insisting that it is a task imposed "over and above courses." From this practice the amount ranges up to 20 semester hours, with no outstanding modal practice. More commonly than otherwise the credit is stated in terms of lower and upper limits, as 2–4, 4–8, 4–12. The median amount is a bit under five hours.

Publication of the master's thesis.—Only one institution insists upon the publication of the master's thesis. The remaining 88 answering the question report that publication is not required.

The time of completion of the master's thesis.—In every case but one the time for the completion of the thesis is indicated as before the examination.

DOCTOR'S THESIS.

The thesis as a requirement.—It is a universal practice of those institutions granting the doctor's degree to require a thesis.

The amount of credit for the thesis.—From what has been said above concerning the tendency of institutions not to state requirements for the doctor's degree in terms of credit hours, we should be led to anticipate that not many institutions specify the amount of credit which is allowed for the doctor's thesis. The answers bear out this expectation. Seven of those who report state that no credit is allowed, some of them indicating that it is required "over and above courses." Five institutions indicate that a year (3), two years (1), or one-half of all the time (1) is assigned to the work on the thesis.

Publication.—Almost all the institutions insist upon the publication of the doctor's thesis, only three stating that publication is not required. One indicates that publication is "urged." The publication is usually in full.

VII. FOREIGN LANGUAGE REQUIREMENT.

MASTER'S DEGREE.

The foreign language requirement.—Of the 42 institutions, 36 state that no foreign languages are required for the master's degree. Of the 5 institutions which report a requirement, 3 insist upon French *and* German and 2 upon French *or* German.

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In the few instances where the foreign languages are required for the master's degree the ability which the student must show is a "reading knowledge" sufficient for research.

DOCTOR'S DEGREE.

Only 2 institutions granting the doctor's degree in education specify no requirements in foreign languages. One requires "two foreign languages"; 3, "two modern foreign languages"; 17, "French and German"; and 1, "such as are necessary for research."

Where opinion deviates from practice in the matter of the requirements of foreign language is in the recommendation of several persons answering that such languages should be required as are needed for research. The emphasis seems with these to be more upon a requirement where a functional relationship of the foreign languages to the pursuit of graduate study is demonstrable, rather than merely upon the relationship of tradition usually obtaining.

In almost every case the ability is a "reading knowledge," sometimes qualified as "fluent," "ready," etc.

By whom tested.—In 16 cases where answer is made, the "appropriate" department, e. g., French or German, applies the test of ability. But in 6 instances the test is applied by some one in the department of education.

When the candidate must show the ability.—In 19 cases of schools granting the doctor's degree, the ability in the foreign languages must be shown a year or approximately a year before coming up for the degree or coming up for the final examination.

VIII. EXAMINATIONS.

MASTER'S DEGREE.

Final examination.—Almost three-fourths of the institutions granting the master's degree insist upon a final examination. The remainder hold no such final examination.

Character of the examination.—Of these institutions in which a final examination for the master's degree is required, 16 make it oral; 1, written; 6, both oral and written; 3, either; 2, either or both; and 1, oral or both.

For the most part these examinations concern themselves with both the courses and the thesis. In a few instances the examination is solely upon courses.

Preliminary examination.—In only 3 instances is the preliminary examination required for the master's degree.

DOCTOR'S DEGREE.

Final examination.—All institutions granting the doctor's degree require a final examination.

Character of the examination.—In 11 institutions, the final examination is oral; in 1, written; in 7, both oral and written; in 1, either; in 2, either or both; in 2, oral or both.

The examination in most of these schools covers all work in courses and the thesis. In a few instances the thesis is not emphasized.

Preliminary examination.—Thirteen institutions require a preliminary examination for the doctor's degree; 10 do not.

Form of the examination.—The practice varies widely as to whether the examination is written, oral, both, etc.

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When the preliminary examination is given.—More commonly the preliminary examination is given a year before the final examination or the conferring of the degree.

IX. THE STAFF.

NUMBER AND TRAINING.

The number and training of the staff in the institutions from which our responses have come are shown in Table 13. A study of its columns shows that very few of the institutions granting the master's degree only have more than 5–9 instructors, while a large proportion have 4 or less. The institutions granting the doctor's degree tend to have a larger number of instructors. However, there are four institutions in this group that have four or less than four instructors.

TABLE 13.—*Number of instructors in education.*

Number of instructors.	Total of those answering.		Granting master's degree only.		Granting both master's and doctor's degrees.	
	Number of schools.	Per cent.	Number of schools.	Per cent.	Number of schools.	Per cent.
0–4	11	31.5	7	46.7	4	21.0
5–9	16	43.8	6	40.0	9	47.4
10–14	6	15.2	2	13.3	4	21.0
23	1	2.9	.....	.....	1	5.3
61	1	2.9	.....	.....	1	5.3
Total	35	100.3	15	100.0	19	100.0

DEGREES HELD BY THE INSTRUCTORS.

The facts concerning the degrees held by those giving instruction to graduate students in these institutions are shown in Tables 14 and 15. The former of these tables aims to show the distribution of institutions by the proportion of instructors holding the doctor's degree. A comparison of the facts as to the proportions of instructors with doctor's degrees in institutions granting the master's degrees only with the proportions for those institutions granting the doctor's shows that a much larger proportion of the latter have such training.

Table 15 sets forth the situation for proportions of instructors with one or the other of the two graduate degrees.

TABLE 14.—*Percentages of instructors with doctor's degrees.*

Per cent of instructors with doctor's degrees.	All institutions supplying data.		Institutions granting master's degree only.		Institutions granting both master's and doctor's degrees.	
	Number of institutions.	Per cent.	Number of institutions.	Per cent.	Number of institutions.	Per cent.
0.0–19.9	1	2.9	1	.....	.....	.....
20.0–39.9	7	20.6	5	35.7	2	10.0
40.0–59.9	10	29.4	7	50.0	3	40.0
60.0–79.9	11	32.3	.....	.....	6	30.0
80.0–99.9	4	11.8	1	7.1	3	15.0
100.0	1	2.9	.....	.....	1	5.0
Total	34	99.9	14	99.9	20	100.0

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TABLE 15.—*Percentages of instructors with master's or doctor's degrees.*

Per cent of instructors with master's or doctor's degrees.	All institutions supplying data.		Institutions granting master's degree only.		Institutions granting both master's and doctor's degrees.	
	Number of institutions.	Per cent.	Number of institutions.	Per cent.	Number of institutions.	Per cent.
20.0–39.9	2	5.9	2	14.3	.....	.....
40.0–59.9	1	2.9	.....	.....	1	5.0
60.0–79.9	6	17.6	2	14.3	4	20.0
80.0–99.9	13	38.2	4	28.6	9	45.0
100.0	12	35.3	6	42.8	6	30.0
Total	34	99.9	14	100.0	20	100.0

THE TEACHING SCHEDULE.

An item of practice in departments of education that has considerable bearing upon the feasibility of caring for graduate work in any effective manner is the size of the teaching load of instructors who give the graduate training. Table 16 presents the maximum and the usual weekly teaching schedules in the institutions from which the replies have come, as well as the maximum teaching schedule regarded as appropriate for such instructors by those who responded to the questionnaire. In a large proportion of schools—58.5 per cent to be exact—the maximum teaching schedule of those who give graduate instruction is in excess of 12 hours, in a few instances running as high as 18 hours. The "usual" schedule tends to be smaller, but in almost a fifth of all the schools reporting it exceeds 12 hours. Opinion in only a single instance favors a maximum load of more than 12 hours.

TABLE 16.—*The weekly teaching schedules of those giving graduate instruction.*

Number of hours.	Maximum.		Usual.		Appropriate maximum.[1]	
	Number of institutions.	Per cent.	Number of institutions.	Per cent.	Number of institutions.	Per cent.
7–8	.....	.....	10	32.3	8	38.1
9–10	6	21.4	8	25.8	5	23.8
11–12	7	25.0	7	22.6	7	33.3
13–14	4	14.3	2	6.5	.....	.....
15–16	9	32.1	4	12.9	1	4.8
17–18	2	7.1	.....	.....	.....	.....
Total	28	99.9	31	100.1	21	100.0

[1] Mostly at the even numbers, 8, 10, and 12.

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DEPARTMENT OF THE INTERIOR
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EDUCATIONAL RECONSTRUCTION IN BELGIUM

By

WALTER A. MONTGOMERY

[Advance Sheets from the Biennial Survey of Education in the United States, 1918–1920]

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EDUCATIONAL RECONSTRUCTION IN BELGIUM.

By WALTER A. MONTGOMERY.

CONTENTS.—Economic recovery and educational connections—Historical sketch of Belgian education—Education during the German occupation—Educational reconstruction—University reconstruction—The University of Brussels.

ECONOMIC RECOVERY AND EDUCATIONAL CONNECTIONS.

Belgium's progress in rehabilitation has been most marked of all the countries devastated by the World War. In resumption of operation of the iron and steel industries, of coal mining, of railroad rebuilding, of the sugar factories, of cotton spinning, of rebuilding residences and communal buildings, the Government, private initiative, capital, and labor of all grades have cooperated in a way deserving to be a model to the other governments of the world.

M. Delacroix, chancellor of the exchequer, presenting the budget to the Parliament, well summarized the task lying immediately before the country in words which have educational as well as economic import:

> Our financial situation will improve by degrees. This year we shall have a budget which will approximately balance. The next year, when we are in a position to estimate the possible amount of indemnity we are to receive, we shall take steps to reduce the national debt. Taxation will have to be well distributed in order that there may be no unfair burdens. Justice is necessary, certainly, but it is imperative to meet our financial requirements. Everybody is spending too much. That must stop. All ranks of society must economize. The laborer is ready to work, if only he can be assured that his efforts have other results than the mere enrichment of his employers.
>
> The interest of the country lies in increased production. It is a very real necessity. War has impeded civilization. We have to make up lost time. Economy is necessary. Always economy. Our opportunity is at hand. The past lays upon us responsibility, and we have no right to compromise the future of our country.

Economic and material rehabilitation have gone hand in hand with the intellectual and the educational. According to the reports of the Anglo-Belgian Union, Belgian cooperation, under the leadership of the noted author, Emile Cammaerts, has organized popular lectures throughout Belgium for the purpose of spreading knowledge of modern countries. All are illustrated, and treat of subjects of vital bearing on the future well-being of Belgium.

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The economic revival is accompanied by an extraordinarily active intellectual revival. All universities and schools are crowded far beyond their capacity, and the minister of science and art, M. Jules Destrée, is even contemplating restoring entrance examinations to universities in order to eliminate those who are less fitted for higher studies. Not less than five or six literary reviews have been lately founded in Belgium, and a generation of new writers, including some remarkable younger poets, is coming to the fore.[1]

One of the signs of educational awakening in Belgium was resumption of the publication of the journal of primary education, entitled L'École Nationale. Suspending publication with the invasion in August, 1914, it is now revived under the slightly different but more comprehensive title L'Éducation Nationale. Its first numbers, November 1 and 15, 1919, outline a statesmanlike program for the reconstruction and revivification of Belgian education. It does not regard the task as a piecemeal one, or segregate the several departments of education. It rather coordinates and makes each live by organic contact with the other. Belgian education is treated under 14 aspects by the most noted educational thinkers of that stricken country. Each sees in education the first and most powerful agency in the rehabilitation of the country.

HISTORICAL SKETCH OF BELGIAN EDUCATION.

In order the better to understand what Belgium has in the way of educational foundations on which to build, it may be well to summarize the chief events and currents of Belgian education before the World War. The organic educational law of 1842, which marks for Belgium the beginning of a modern educational system, was repealed by the law of 1879, carried by the Liberal Party. After a trial of five years, it was supplanted by the law of 1884, carried by the Catholic Party, and constituting in essence a return to the law of 1842. In 1914, just before the war, a new school law, with compulsory attendance from 6 to 14 years as its most prominent feature, was passed by Parliament, but did not, of course, go into operation.[2]

EDUCATION DURING THE GERMAN OCCUPATION.

The International Bureau of Teachers' Associations, to which the German Teachers' Association also belonged, had its headquarters in Belgium. At the outbreak of the war the bureau was transferred to Holland. According to Neue Bahnen, January–February, 1915, page 215, the International Union made special efforts to ameliorate the condition of Belgian teachers. They endeavored to secure the return

[1] Abridged from "The Present Situation in Belgium," *The New Europe*, May 6, 1920.

[2] Facts taken from La Reforme de l'Enseignement, by M. Léon De Paeuw, Brussels, 1919.

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of the Belgian teachers to their schools, in which they were seconded by the German military authorities, who promised that the teachers who should open their schools again would be permitted to go on with their work undisturbed. Their presence, it was hoped, would help to restore order and nominal activities in the occupied territory.

Among the population there was a strong desire to have the schools resume their work even in places that had suffered much during the invasion. In Brussels the Germans claim that instruction had suffered virtually no interruption. Schools were opened in Luttich on October 1, 1914, in Antwerp November 9, in Louvain December 1. The German Advanced Modern School in Brussels was also to resume its work at as early a date as possible.

In the Neue Bahnen for August, 1915, a correspondent, Walther Kluge, writes of the Belgian schools (none were in session where he was):

The school buildings had been commandeered; furniture removed or piled haphazard in the rooms. Bibical pictures, very indifferent as works of art, hung on the walls.

According to a statement of a Belgian teacher, a compulsory law was to have gone into effect in 1914. The teacher did not like the State school—a class of schools conducted parallel with those conducted by the clergy. The teachers did not concern themselves with politics—they were neutral.

The salaries of the teachers were apportioned on a pro-rata basis of the population of the district, creating four salary classes. Every two years an increment of 100 francs was added to the basic salary, rising to a maximum in each of the four classes of 2,600, 2,750, 3,100, and 3,400 francs, respectively.

From the training colleges a teacher might procure a diploma for each of several branches. The more diplomas he had, the better his pension status. Assuming that a teacher must be retired on a pension with 25 years of service, and has had a salary of 3,000 francs, the number of his diplomas was added to his years of service, and the sum multiplied by his salary, and the product divided by 50. (Example: $25+2\times3{,}000\div50=1{,}620$ *francs.*)

Anything like a uniform standard of education was impossible in view of the many classes of schools—State schools, schools accredited by the State, schools conducted by the clergy, and still others. To this feature of Belgian education must be ascribed the lack of laws for compulsory attendance.

The schools and the teachers look to France for their models in educational administration. Though the Flemish people are of Germanic origin, their education certainly is not.

An inquiry made of 34 persons, between the ages of 14 and 62, showed that some had attended school only 1 year; others ranged from 1 to 13 years of attendance. Some could not write their names.

EDUCATIONAL RECONSTRUCTION.

Complete reorganization of the entire Belgian system of primary and agricultural instruction, with close adaptation to the needs of the reconstruction and war period, are the aims of the governmental and educational authorities, according to the first information furnished since the war by the department of sciences and arts. It is

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anticipated that the program and schedule of studies of the primary and normal schools will be the first points of attack.

The new organic law of primary instruction expressly provides for the installation of State instruction along practical lines for pupils of 12 to 14 years. These schools are to be modeled after the continuation schools projected by the English education act of 1918.

The devastated schools of Flanders are in actual process of reconstruction. The Province of East Flanders has voted a preliminary loan of 10,000,000 francs to aid the individual communes in the establishment of 700 to 800 classes in the public schools, in addition to those existing before the war. This does not include those destroyed by the German occupation.

Number of pupils in the primary schools in Belgium in June, 1920.[1]

	Public schools.	Free (denominational).
Schools	4,827	3,132
Classes	13,575	11,212
Boys	326,698	156,975
Girls	187,309	289,759
Teachers (men)	8,086	3,048
Teachers (women)	7,512	8,094

[1] Figures taken from the organ of the Belgian Teachers' Association.

The school law passed October 13, 1919, modifies the organic law of primary education in quite a number of its articles, chiefly in those that fixed the salaries of teachers. Following are the main lines of the changes:

ARTICLE I. The communal council fixes the salary of communal teachers on the following bases:

1. A minimum salary of 3,000 francs for men teachers and of 2,600 francs for women.
2. An allowance for residence fixed as follows for several classes:
   In communes of 5,000 inhabitants and less, 200 francs.
   In communes of 5,001 to 40,000 inhabitants, 300 francs.
   In communes of 40,001 to 100,000 inhabitants, 400 francs.
   In communes of more than 100,000 inhabitants, 500 francs.

This allowance shall be doubled—

(*a*) For married men teachers and for widows and widowers with one or more children.

(*b*) For heads of schools.

ARTICLE II. The teacher is entitled to 10 annual increases of 100 francs, followed by 10 biennial increases of 150 francs, up to the sum necessary to increase the minimum allowed by law up to 2,500 francs.

For women teachers the scale of increases is fixed, respectively, at 80 francs and 120 francs up to 2,000 francs, the minimum allowed by law.

ARTICLE V. An allowance for administration, calculated on the basis of 100 francs a class, is granted to school heads officially, to the teachers in charge of instruction, who also have the oversight of five classes or less. This allowance can not be less than 200 nor more than 600 francs.

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The Moniteur Belge of March 27, 1920, published a series of royal decrees establishing a Higher Council of Public Instruction, reorganizing the existing conseils de perfectionnement for higher, middle, normal, and primary education, and designating the members of the four groups.

By the terms of these decrees, the Higher Council of Public Instruction, composed of 15 members named for a term of four years, is charged with the duty of establishing the coordination of the different divisions of education in which the State is interested. It meets at the call of the minister of sciences and fine arts, or at the request of at least half its members. The director general, the secretary of public instruction, sits with it, but has only a consultative voice in its deliberations. The council is to give its advice upon matters submitted to it by the minister.

Every member may also submit to the council matters for consideration which seem useful to him, and call for their examination and a vote thereon for governmental guidance. The council may meet separately or with one or the other of the conseils de perfectionnement. It may delegate one or more of its members to attend, with consultative voice only, the deliberations of one of these councils.

The higher council may study every question concerning education, even if it be not submitted to it by the minister. It may, with the authorization of the minister, institute investigations, consult specialists, and take charge of temporary inspections and traveling missions, under the direction of the minister.

The regulations governing the three conseils de perfectionnement are along the same lines. It is to be noted that the council for higher education, consisting of 21 members, will have the power finally, when the question shall concern the interests of the universities exclusively, to deliberate with its body reduced to only the representatives of that division.

The council of middle education, consisting of 10 members, may divide into two sections, the first having to do with the athenées, the other with the middle schools. It is to give its advice upon the competitive examinations, upon the national expenditures for this division of education, upon examinations, degrees, certificates, all as limited by legal dispositions; it examines the textbooks used in this division of education, and proposes instructions to be given to inspectors.

The council of normal and primary education, composed of 15 members, embraces two sections, the normal and the primary. It gives its advice upon all matters submitted to it by the minister

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by one of its members. The minister submits to the council the reports of the provincial inspectors on the situation of primary education. The council examines the books and teaching materials submitted to it by the minister or by its members.

To sum up, the reform instituted by M. Destrée, the minister, consists first of conferring upon the three councils existing before the German occupation and now reorganized the rights of initiative they did not possess before and, by the establishment of a higher council of public instruction, in coordinating the labors of the councils in such a way as to fill in gaps, avoid duplication, and establish the necessary links between the various divisions of education.

The opening session of the four councils, meeting together, was held March 30, 1920. The minister in a moving appeal called upon all the members to labor together for Belgium's reconstruction, and urged especial attention to matters concerning moral and civic and esthetic education, the conditions of admission to higher studies, the professional preparation of teachers of secondary education, and the improvement of primary normal education.

The Federation of Christian Teachers of Belgium met in Brussels in August, 1919, the first time since 1913, with a large number of members present. Complaint was voiced of the delay of local councils in the payment of teachers' salaries long in arrears, some as far back as the opening of the war. Resolutions were passed urging the passage of a law incorporating the following principles: Equality before the law of all schools, whether free or official; graduated salaries; salaries for men and women teachers, paid by the State, with 3,600 francs as minimum and 6,000 francs as maximum; bonuses for teachers who had fought in the war.

The official Belgian League of Education has reorganized, meeting (1920) in Brussels, and following the same general lines as the French league of the same name, urging immediate legislation along the following lines: Organization of the fourth grade, education of abnormals, assistance to poor scholars, reform and development of normal education, publication of works concerning popular education, technical education, and popular agricultural training and apprenticeship.

Before the invasion Belgium manifested progressive spirit in the matter of allowing girls access to higher studies. The same spirit is shown in the reestablishment of the Girls' High School at Brussels. This institution, however, is intended for girls who do not intend to prepare for university courses, or for the professions. Its purpose, as announced, is to train " women who are to play an important rôle in the intellectual and moral development of Belgium."

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The schedule of hours follow the same lines as the athenées which admit girls, but its subjects of instruction are widely different: Psychology, history of French literature, history of foreign literature, historical criticism, history of the ancient civilizations and the Orient, history of Greek and Roman civilizations, national history and political institutions of Belgium, social and economic studies of modern times. Latin and Greek courses are elective.

The city of Brussels has established the normal studies necessary for the training of teachers of manual arts, especially for fourth-grade children. They will extend over two years, with eight hours weekly. The first year will be devoted to woodworking, metal working, technical and ornamental drawing, technology, use of tools, and wood carving.

In the second year the studies of the first will be enlarged upon, and in addition studies in industrial hygiene, trigonometry, elements of mechanics, and special methodology of manual arts will be offered.

Similar schools for girls are projected, to be opened as soon as possible.

The new free (popular) University of Brussels has secured the site occupied by the French section of the exposition of 1910 and will at once erect an adequate building. For this, among other subscriptions, the provincial council of Brabant has granted a million francs.

UNIVERSITY RECONSTRUCTION.

At the session of the Belgian Parliament on September 10, 1919, the premier communicated to the Chamber of Representatives a letter from Mr. Herbert Hoover, which, after accounting for all maintenance expenses of the Commission for Relief in Belgium and estimating a balance of 150 millions of francs still remaining, proceeded to set forth a financial project for the restoration and development of higher education in that country.

According to Mr. Hoover's statements—

> The war and its economic effects demonstrated the supreme importance of higher instruction for all social classes and especially for the masses. It is necessary (*a*) to open schools of higher education for the sons and daughters of those who have not now the means to send them to such schools; (*b*) to increase the revenues of such schools in such a way that they may render to the community the services justly to be expected of them and that they may be able to receive new development in the future.

Mr. Hoover proposed that—

> 1. Thirty-seven per cent of the sum of 150 millions be applied to the establishment of a national educational foundation managed by a commission composed of Belgians and Americans. The revenues of this foundation shall be intended as maintenance grants to the children of families in moderate circumstances in order to permit them to proceed to higher education.

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2. Sixty-three per cent of the 150 millions shall be appropriated at once to the following institutions: The Universities of Brussels, Louvain, Ghent, Liège (13.33 per cent for each); school of mines at Mons (3 per cent); Colonial Higher School (6.66 per cent).

The Chamber of Representatives accepted the donation with profound gratitude and appreciation of its meaning for the future of Belgium.

The National Educational Foundation has thus at its disposal a capital of 55,000,000 francs, which it is hoped may be still further increased after the final settlement of all accounts of the Relief Commission. This foundation will be incorporated by a law yet to be passed. The revenues will be devoted especially to the establishment of local and traveling scholarships for needy students. The trustees of the foundation have as their aim to make such selections of beneficiaries as shall introduce a truly educational élite into the universities. On the other hand, a portion of the revenues will be appropriated for the extension of learning and granted to professors to permit them to travel, to pursue scientific research, and to publish specialized works which their personal resources do not permit them to issue.

The sum total assigned to institutions of higher education is fixed, subject to change, at 95,000,000 francs—20,000,000 for each of the four universities, 10,000,000 for the colonial school, 5,000,000 for the school of mines. Of this sum, an advance of 20,000,000 was turned over in September.

Interesting legal complications have resulted from these donations. The free Universities of Brussels and Louvain have been incorporated by law since 1911; but the State Universities of Ghent and Liege are not on this footing. They desire, however, to obtain this status by law. The scheme outlined by Mr. Hoover now proposes to divert the 4 million intended for higher education not to the State but to the universities themselves. The latter hail this with delight, for they perceive in the decree of incorporation a measure which will confer upon them, in the eye of the State, an autonomy which they have never enjoyed and do not now enjoy. They see in it also far-reaching consequences, not only for material enrichment but also for the recruiting of their scientific and professorial staffs.

The announcement of the donation of the commission for Belgian relief has aroused delight and no less surprise in scientific circles. The preliminary steps to the decision of the commission were known to only a few privileged members, though they involved many long and minute investigations into educational matters. The genesis of the final act may be traced back to April, 1916. While the war was in full progress, delegates from the four universities and the national relief committee, undaunted and still full of confidence in the ulti-

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mate issue of the conflict, meeting for routine work, dared to look beyond that into the field of the nation's educational needs. With the increase of the sums at the disposal of the committee, their plans took a wider scope and came to include educational matters as well.

The donation attains two ends at once, the democratic and the scientific. It has received universal commendation both in Belgium and France. In the latter country it has been commended even by that section of the French press which is inclined to question the future of purely scientific studies in the increasing democratization of modern society. The combination adopted, that of carrying higher education to its highest degree of perfection and at the same time making it freely accessible to the youth of the masses, affords the best of all solutions yet devised for the problem of the future relations of science and democracy—a problem universally regarded as one of the most serious that has to be faced in modern education.

A vital feature of the scheme is the stipulation that no portion of the donations is to be touched for the construction of buildings. It is intended that they be entirely devoted to the improvement of the conditions of life for the professors and students and the endowments of laboratories and libraries.

THE UNIVERSITY OF BRUSSELS.

Three new courses have been instituted this year in the University of Brussels. One, in pedagogy, has been established independent of the faculties. Courses are open to teachers of the secondary and primary education, as to candidates for the doctorate of philosophy, letters and sciences, who propose to follow a career in the athenées (corresponding to the French lycées). In order to appreciate more fully the meaning of this new regulation, the reader is reminded that, since the abolition of the higher normal schools in 1890, the teaching force of the secondary schools has had to be recruited among the doctors sent out by the universities. However, it is recognized that if the scientific preparation of this type of teachers is satisfactory, their professional and pedagogical preparation is by no means so. It is to remedy this situation that the University of Brussels has established the interrelated unit of courses making up the pedagogical section: Biology, psychology, sociology, pedagogy, methodology, physical education and hygiene, history of pedagogy, ethics, and history. These courses are reenforced by practical exercises in teaching, in experimental psychology and pedagogy, and in social studies tending to bring teachers and students together.

After two years of attendance on these courses, practical exercises, grouped studies, and two examinations, the students obtain a

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U. S. BUREAU OF EDUCATION

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AGRICULTURAL EDUCATION

By

C. D. JARVIS
Specialist in Agricultural Education
U. S. Bureau of Education

[Advance Sheets from the Biennial Survey of Education in the United States, 1918–1920]

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AGRICULTURAL EDUCATION, 1918–1920.

By C. D. Jarvis,

Specialist in Agricultural Education, U. S. Bureau of Education.

Contents.—I. Agriculture in the colleges: The work of the colleges during the war—Problems following the war—Changes in organization—Improvement of instruction—Modification in curricula—Training teachers of agriculture—Agricultural extension—Research in agriculture. II. Agriculture in secondary schools: Schools and enrollment—Part-time schools—Improved relationship—Improvement of teaching—Improved methods of instruction. III. Agriculture in the rural elementary schools.

I. AGRICULTURE IN THE COLLEGES.

THE WORK OF THE COLLEGES DURING THE WAR.

The agricultural colleges held a unique position in their relation to the Nation's security during the war period. Associated in a strong organization, united in a common purpose, and with a direct connection with the Federal Government, these institutions, without a moment's delay, began to function in the Nation's gigantic program of winning the war. Students withdrew from the colleges at first for enlistment in the military service and later through the operation of the draft, thereby relieving the institutions of much of their regular responsibility.

Most of the agricultural colleges, through cooperation with the War Department, conducted short vocational courses for the special training of men for various kinds of work in the military service. Although later on they undertook, along with most of the other educational institutions, the more pretentious kind of the training in connection with the Students' Army Training Corps, they from the beginning of the war turned their attention almost wholly to increasing the food supply. Of those members of the several faculties who did not enter the military service many were detailed to the Federal departments for special duty and others were assigned to the extension divisions of the colleges.

From the standpoint of agricultural education, therefore, the colleges of agriculture failed to function during the war period. It is generally conceded, however, that the influence of these institutions during the previous half-century, coupled with that in the food production program during the war, was an important factor

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in the Nation's great achievement. In the first place, through the researches of these institutions, there had become established a ground work of knowledge concerning economic food production that was of inestimable value during the war. Secondly, through the efforts of these colleges, thousands of intelligent leaders had been developed for the rural communities, each of whom served as a powerful stimulus when the emergency came. Lastly, through the organized extension activities of these institutions, extending to the remotest corner of the several States, millions of farmers were enabled to obtain and apply the most approved agricultural practices and methods of management and they were enabled to work in harmony with the well-conceived, Nation-wide program for increased food production.

PROBLEMS FOLLOWING THE WAR.

Those who expected a prompt return to normal conditions in the agricultural colleges following the cessation of hostilities have been disappointed. The problems of readjustment have been many and in some cases very serious.

Increased enrollments.—The outstanding problem in most of the colleges following the war was that of accommodating the greatly increased number of students applying for admission. Most colleges, even before the war, had reached the limits of their capacity, and to find room for those students whose registration was deferred on account of the war, along with those who would normally apply for admission, constituted a real problem. In some institutions, especially those located in the open country and in the small towns, the problem was to find living quarters. In other colleges, inadequate classroom and laboratory facilities constituted the chief difficulty. In still others, the lack of a sufficient number of teachers developed into a serious situation. In many cases all of these problems presented themselves, resulting in situations never before confronted. The dean of the college of agriculture in one of the Middle Western universities sums up the situation at his institution as follows:

> We have been caught with a greatly increased attendance and a decreased faculty, and it has been a case for the last year of meeting situations as best we could from time to time. We have about 35 vacancies on our faculty which we can not hope to fill, and the result is that we are not only unable to do new things but we can not do the old things as well as heretofore.

Inadequate support.—Closely related to the problem of taking care of the greatly increased number of students is the problem of support. The marked shrinkage in the purchasing power of the maintenance appropriations has created a situation in which all of the colleges are seriously concerned. While most of the institutions have suffered from their inability to buy the regular amount of supplies, this feature of the problem has not been so generally alarming as

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that resulting from the inability of the institutions to retain their faculty members. The quality of service rendered to commerce and industry by college professors and instructors during the war has led commercial and industrial concerns to look to the higher institutions for men of superior ability, resulting in the loss to the service of many of the best teachers and investigators. Administrators in this connection are eager to explain that these men have not really left from choice but in most cases have been forced out by the inability of the institution to pay them salaries sufficient to support them and their families in reasonable comfort. It has been pointed out also that a more complete disruption of the several faculties has been prevented only by the spirit of consecration and the ardor of institutional attachment displayed by many members of the teaching force, especially those who were not wholly dependent upon their salaries for support.

In several States maintenance appropriations were increased sufficiently to provide for a general advance in salaries, but in many cases such increased appropriations were barely sufficient to take care of the increased expense resulting from the advance in the cost of supplies and equipment. In many institutions a conspicuous curtailment in the purchase of supplies was necessary to provide for the increase of salaries of individuals whose services could scarcely have been spared. In some cases, also, building operations have been postponed in order that all available funds may be devoted to the increasing of salaries. Several institutions, to meet their legitimate obligations, have created deficits with the expectation that their respective legislatures would provide the necessary funds at forthcoming sessions.

Twenty colleges, out of 35 reporting, made general advances in salaries during the biennium. Such advances range from 10 to 30 per cent. The colleges of Colorado, New York, South Carolina, and Tennessee have reported 30 per cent advances for full professors and proportionate increases for teachers of lower rank. New Mexico reports an average advance of $200 and Oklahoma $400 for teachers of all ranks. Florida and Maine report a flat increase of $300 for full professors and proportionate increases for teachers of lower rank. Wisconsin reports average increases of from 15 to 27 per cent according to rank.

The high cost of building construction.—A few of the colleges have been able to make some progress in new buildings and other permanent improvements. In many cases the funds that have been appropriated for such purposes have been held with the hope that the cost of building would decline. Several institutions report that so rapid has been the advance in building costs that appropriations based upon estimated costs were entirely inadequate to meet the needs, making it necessary to hold up building operations until ad-

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appropriations can be obtained. Among the more conspicuous appropriations reported for new agricultural buildings are the following: Alabama Polytechnic Institute, $125,000; Connecticut Agricultural College, $226,455; Rutgers College of New Jersey, $75,000; New York State College of Agriculture, $44,000, and $3,000,000 for a building program extending over a number of years; South Dakota State College, $210,000; University of Tennessee, $300,000; University of Wisconsin, $49,000.

CHANGES IN ORGANIZATION.

With the increase in growth and in the growing complexity of the activities of the colleges of agriculture has come a realization that the question of organization of curricula and general supervision of instruction has not received the attention that it deserves. Several colleges during the past year or two have attempted to solve this problem by the appointment of an officer as director of instruction, coordinate with the director of research and the director of the extension service. The New York State College of Agriculture and the University of California are among those which have recently adopted this plan. In the latter institution, the appointment is regarded as temporary; the idea being that it may be passed around from year to year among other members of the faculty of agriculture. The functions of such an office vary with the institution but generally include the study and coordination of curricula, the qualifications of instructors, and the improvement of instruction in general.

There is a tendency in some of the colleges, also, to extend the responsibility of the directors of instruction, research, and extension, respectively, throughout the whole institution. The Alabama Polytechnic Institute and the University of Maryland have recently adopted this plan. The object of such a plan is to insure properly coordinated programs of teaching, of research, and of extension. Extension and research activities are gradually extending beyond the limits of the agricultural division, and such a plan as this insures closer cooperation between divisions.

IMPROVEMENT OF INSTRUCTION.

Unusual interest has been manifested among agricultural faculties, particularly during the past year, in the subject of improvement of instruction in the colleges. Evidence of this fact is found in the character of the discussions at the Springfield meeting of the Association of Land Grant Colleges. Dean R. L. Watts, of the Pennsylvania State College, at this meeting described an experiment in the professional improvement of college teachers. The services of an expert educator were procured to conduct a 10-lecture course for members

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of the faculty of the Pennsylvania State College. The course included instruction in the methods of organizing courses, of maintaining interest, of measuring results, etc. Attendance was entirely optional. At first many of the faculty members were skeptical concerning the outcome, but as the work progressed the interest became intense, and all members of the class agreed that the results of the experiment were highly valuable.

Dean W. W. Charters, of the Carnegie Institute of Technology, addressed the association on the subject of "Improvement of College Teaching." This address was a forceful plea for the general adoption of the problem method in teaching. He pointed to the fact that the method was not new, for it had been successfully applied to the teaching of law for many years. He declared that it was this method, known in law education as the "case method," that revolutionized education in law.

Many speakers called attention to the need for introducing more technical courses during the first two years of the four-year college course in agriculture. The belief that courses in general chemistry, botany, zoology, and geology should be regarded as prerequisite to all technical courses in agriculture is gradually giving way to the belief that the educational process is facilitated by giving instruction in the concrete in advance of the abstract.

The general appreciation of the need for greater attention to the question of improvement of instruction has been shown by the effort on the part of the colleges to create an office for the specific purpose as described under the preceding head.

MODIFICATION IN CURRICULA.

That there is a growing need for a more general training in agriculture and country life than that offered in many of the colleges, especially those having a liberal elective system, is shown by the results of a study made by the Bureau of Education's advisory committee on agricultural education.

The present is regarded by many as a transition period in which much of the technical instruction given in the first and second years of the college curriculum will gradually be pushed back into the secondary school curriculum. That progress is being made in this direction is shown by the following statement from the 1920 announcement of the University of California:

> Three new courses in general agriculture, one each in agronomy, animal husbandry, and horticulture, will be offered and may be taken as elective work throughout the freshman year and the first term of the sophomore year. Students who have completed satisfactory high-school work in agriculture will not ordinarily take these three college courses and will therefore have more time for other college work.

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During recent years there has been a disposition on the part of a number of the larger colleges of agriculture to allow students the greatest freedom of choice in the matter of specialization. Students have not only been allowed to specialize in subjects like animal husbandry or horticulture, but in many institutions they have been permitted to carry their major work in such narrow lines as horse raising, sheep husbandry, fruit growing, vegetable growing, plant breeding, microbiology, soils, etc. It is interesting to note a decided reaction toward the limitation of specialization. The University of California, for example, has reduced the number of major subjects in the college of agriculture from 17 to 6. In keeping with the same general policy this institution has stricken 40 courses from the list offered by the college of agriculture. The instruction contained in these courses is now organized in 18 new courses, making a net reduction of 21. It is the belief of the authorities that this reorganization of instruction will obviate excessive duplication and reduce the number of small classes and prevent overspecialization.

On the other hand, many colleges continue to introduce new courses to meet the advanced requirements of professional groups. The New York State College of Agriculture, for example, has recently introduced specialized courses for fertilizer salesmen, poultry judges, and bee-keepers. The University of Wisconsin also has introduced specialized courses for boys' and girls' club leaders, and for county demonstration agents. Such courses, however, have a definite aim, and taken with other related courses in the curriculum serve to make the instruction more comprehensive rather than to restrict its scope.

There is also a tendency on the part of the colleges of agriculture to require more work in economics and sociology, and to bring about a closer relationship between the instruction in economics and that in technical branches and more practically the instruction in farm management. The New York State College of Agriculture has united the departments of rural economy and farm management and has established a new department of rural social organization in which five new courses are offered.

The course designated "agricultural relationships," as offered last year for the first time by the Kansas State Agricultural College, is also an attempt to give the student a knowledge of the whole field of agriculture from the economic standpoint.

The one, two, and three year subcollegiate curricula, as offered by many of the colleges, are still very popular despite the rapid development of agricultural courses in high schools. The Massachusetts Agricultural College has established a two-year curriculum to meet the demand for instruction of this nature. The Connecticut Agricultural College has shortened its two-year curriculum by reducing the number of months in each session from nine to five, and has raised

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the minimum age from 16 to 18 years. Although of a secondary nature, such courses meet the need of men of mature years who are not willing to attend classes with students of secondary school age. The tendency in the college is to limit more and more the enrollment in these curricula to mature students.

Agriculture for women.—Possibly as a result of the interest in agricultural pursuits developed by woman during the war, a demand has arisen for collegiate instruction for women in this subject. Some of the colleges have already responded to this demand, and many women students are now enrolled. The Massachusetts Agricultural College, for example, has introduced a limited amount of work in home economics for the benefit of young women who desire training for agricultural vocations. At the University of Wisconsin, 12 women students taking agriculture have formed an agricultural women's association.

TRAINING TEACHERS OF AGRICULTURE.

Before the passage of the Federal Vocational Education Act very few, probably not more than six, of the colleges of agriculture offered separate curricula or major options for the special preparation of teachers of agriculture. A number of institutions, however, have offered as elective some professional courses in education, but until recent years students have not manifested much interest in the subject. Previous to the year 1918, only 283 students graduated from special teacher-training curricula or major options in 38 of the agricultural colleges from which reports have been received. Since only one of the institutions which failed to report offered special opportunies for prospective teachers of agriculture, this figure may be regarded as approximately correct.

Number of students in training.—The following statement prepared from data supplied by Mr. C. H. Lane, of the Federal Board for Vocational Education, gives a fair picture of the progress in teacher training during the past two years:

In the north Atlantic region 352 students were enrolled in resident teacher-training classes during the year 1919–20, as against 247 for the previous year. In the southern territory 849 students were enrolled in 1919–20, compared with 389 for the previous year. The east-central region had an enrollment of 343 for 1919–20, as against 282 for the previous year. In the west-central region, for 1919–20, 491 students were enrolled as against 164 for the previous year. In the Pacific-coast region 275 students were enrolled in 1919–20 compared with 252 for the previous year.

In summarizing the enrollment in resident teacher-training classes it is found that there were 2,310 students enrolled during 1919–20, compared with 1,334 for 1918–19. Experience has shown that many students who take work in these classes do not become teachers. Furthermore, these enrollments represent the number of students of all years, and many of them will not be immediately available for service. In 1920, 444 students who had carried the work in agricultural education, were graduated.

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Demand for teachers exceeds the supply.—Despite the increase in the number of students graduating from teacher-training curricula the demand for teachers of agriculture is insistent and far exceeds the supply. A recent inquiry revealed the fact that 465 additional teachers of agriculture will be needed for the year 1920–21. On the basis of the amount of money which will be available when the Smith-Hughes appropriation matures in 1925–26, Mr. Lane estimates that 1,135 teachers, at an average of $2,000 per teacher, will be needed if all the money is to be used. In his estimate Mr. Lane assumes that $9,071,000 will be available, and that the several States will reimburse teachers on the basis of one-third Federal, one-third State, and one-third local, in harmony with present tendencies. Estimates, based upon the probable growth of secondary agriculture, indicate the possibility of an even greater demand, and suggest that unless the colleges greatly increase their output of agricultural teachers, progress in the development of secondary agriculture is likely to be retarded.

So insistent has been the demand for teachers of agriculture that many of the agricultural colleges have been called upon to offer during the summer special training courses of from four to nine weeks' duration. Some of these courses were planned especially for supplying the needed technical information to persons who already possessed the necessary professional training and teaching experience. Others were designed for agricultural college graduates who needed professional training in education to qualify for teachers' certificates.

The teacher-training curriculum.—Along with the growth of teacher-training work in the colleges there has been a tendency to scrutinize more closely the content of the teacher-training curriculum. While a few colleges still require prospective teachers to take the regular agricultural curriculum, which requires specialization in some phase of the subject, and to carry as elective the necessary professional courses, the majority of them have provided specially adapted curricula.

There is a growing belief that the prospective teacher of agriculture should be given more instruction in rural economics and rural sociology than that generally included in the curriculum. So insistent has been the demand in some institutions for such work, that the teacher-training curriculum has been modified in various ways. In some cases the new work has been added at the expense of technical instruction; in others, the amount of humanistic work has been reduced, and in still others some of the professional courses have been eliminated. Many of the educational specialists at the institutions are now asking the question whether an additional year's work should not be required for students who plan to teach agriculture. The University of California already has taken steps in this direction and

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other institutions are encouraging students to take an additional year and secure a master's degree.

The amount of work required in professional courses including psychology ranges from six semester hours, as required by the University of Arizona, to 29 semester hours as required by Clemson College. The common requirement, however, ranges from 12 to 18 semester hours. Seventy-six per cent of the colleges reporting fall within this range. The most common requirement is 15 semester hours, which is prescribed by 12 colleges. In many States the amount of work to be carried in professional subjects is prescribed by law, and in such cases the colleges aim to provide the minimum requirement. Such laws frequently were made before the training of teachers of agriculture was undertaken and were formulated to meet the needs of teachers of academic and science subjects. Since the teachers of agriculture require so much technical knowledge, many of the States have modified their laws to meet the peculiar needs of such teachers.

Several of the colleges still require the students who expect to teach to specialize in some phase of agriculture and to take as electives such courses in education as are needed to qualify for a certificate to teach. Most of the men in charge of teacher-training work in the colleges have come to believe that for the prospective teacher of agriculture a general course in agriculture is more suitable than one that is highly specialized. There has been conspicuous progress during the past year or two in the development of basic courses in the several branches of agriculture to meet this long-felt need, and at the same time to insure a broad general knowledge of the whole field of agriculture on the part of all students of the subject.

Facilities for practice in teaching.—Not only has rapid progress been made in the improvement of curricula for the training of teachers of agriculture, but great achievements have been made toward providing appropriate facilities for practice in teaching on the part of prospective teachers. The institutions have realized that practice work should be conducted under conditions as nearly normal as possible, and it has been necessary first of all to establish secondary schools of agriculture to serve as laboratories for observation and practice. Although the plans of many of the colleges for providing practice in teaching are in a formative stage, it seems advisable to record the present status in order that all may be informed concerning the methods commonly employed to meet the requirements. The nature of the facilities at present may be classed somewhat arbitrarily under four heads, as follows:

1. Practice school maintained by the teacher-training institution. Six colleges, those of Arkansas, Missouri, North Dakota, South Carolina, Wisconsin, and Wyoming, depend upon the institution's

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practice school to provide facilities for practice teaching in agriculture. The University of Missouri makes use of a high school in a near-by town as well as its practice school. The North Dakota Agricultural College depends to some extent upon the short-course and other classes in secondary agriculture to augment the facilities of the practice school. It may be assumed that most of these practice schools maintain departments of agriculture, but the statements in a few cases are very vague in this respect.

2. Secondary schools of agriculture at the college. According to the returns, eight colleges, those of Colorado, Kansas, Minnesota, Nebraska, Montana, New Mexico, Oklahoma, and Rhode Island, provide for practice teaching in secondary schools of agriculture connected with the college. In the case of New Mexico, agricultural classes in the college preparatory school provide the facilities for practice. In the other cases, the work is done either in the so-called "school of agriculture" or in a regularly accredited vocational school on the campus. Such schools differ from vocational schools throughout the State mainly in that the pupils are generally older. Where collegiate methods of teaching are employed the value of these schools for practice teaching is greatly diminished.

3. One or more local or near-by high schools with agricultural departments. Twenty-five of the colleges, those of Alabama, Arizona, Delaware, Florida, Georgia, Idaho, Illinois, Iowa, Kentucky, Louisiana, Maryland, Michigan, Mississippi, Missouri, Nevada, North Carolina, Ohio, Oregon, Tennessee, Texas, Utah, Vermont, Virginia, Washington, and West Virginia, make use of near-by high schools to provide practice teaching. With the exception of Illinois, Missouri, and Ohio, the work is limited to the facilities of a single school. More or less variation exists concerning the cooperative arrangements, but in most cases a member of the teacher-training department assumes the responsibility for the work of the agricultural department, the teaching being done by apprentice teachers. Maryland University pays half the salary of the agricultural instructor of the local high school, who is also a member of the department of education at the university. The University of Missouri supplies the agricultural instructor, and the local school provides all other facilities. The New York plan includes, in addition to the adoption of the apprentice-teacher method, as described below, the use of a near-by high school in which the college supplies the teacher.

4. The apprentice-teacher plan. This plan for providing practice in teaching is followed by eight colleges, those of California, Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, and Pennsylvania. The Kansas State Agricultural Col-

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lege probably will adopt this plan as soon as the need for extending facilities warrants it. The cooperative arrangements with the school authorities differ somewhat, but in general the apprentice teacher serves as assistant teacher without remuneration. In New York State, and possibly others, the apprentice receives a nominal salary borne jointly by the college and the State.

Among the 40 institutions reporting information on this subject the amount of practice teaching required varies from 20 hours to 18 weeks, full time. As nearly as can be determined from the questionnaire, 23 colleges require at least 60 hours of teaching. These are the colleges of California, Connecticut, Delaware, Florida, Georgia, Illinois, Maine, Massachusetts, Minnesota, Missouri, Montana, Nebraska, North Dakota, New Hampshire, New Jersey, New Mexico, New York, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, and Wyoming.

From the foregoing facts it is apparent that considerable progress is being made in providing facilities for practice teaching. Eight colleges have adopted the apprentice-teacher plan; 25 colleges have arranged for practice facilities in near-by high schools in which agriculture is taught; 8 others have used for this purpose the secondary courses in agriculture on the campus; and 6 use practice schools maintained by the institution. That progress is being made is evidenced further by the fact that at least 23 colleges require a minimum of 60 hours of practice teaching.

It is evident, nevertheless, that in many colleges, especially those with large enrollments in teacher-training and with only one or two practice schools, the facilities are far from meeting the needs. In view of these conditions and for the purpose of establishing a norm toward which to aim, the committee on practice teaching of the American Association for the Advancement of Agricultural Teaching, at its Springfield meeting, in 1920, suggested certain standards which should as far as possible be attained in practice teaching. These are:

1. The teaching should be conducted with pupils who are studying vocational agriculture.

2. The amount of teaching should consist of not less than 60 actual hours.

3. The conditions under which the practice teaching is conducted should be as nearly as possible like those that the teacher will find when he accepts regular employment.

4. The teacher in training should have sufficient supervision to insure professional growth.

5. The teacher in training should have an opportunity to supervise the practical work of vocational students.

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6. The community relations of the teacher of agriculture are so important that he should be expected to participate in community activities.

Research in agricultural education.—In the development of teacher-training work in the colleges attention is now being given to the need for research in agricultural education. The Pennsylvania State College in this connection makes this statement:

> We are now planning to add to our staff of the rural-life department a research professor in agricultural education. As you may know, vocational agriculture has been taught in the vocational schools of Pennsylvania for the past eight years. We feel the need of further study of our problem, and it is for this reason that we wish to carry out research as a part of our program. In the past it has been common with practically all institutions to have most of such work done by graduate students. Of course, graduate students will be working on some such problems, but we want to go much further into the matter than it is possible for graduate students to go. We shall want for this work a man whose training and experience will enable him to go into the heart of the problem and make a really constructive study of the work in agricultural education. I very firmly believe that such a study will make the largest contribution to agricultural education that has yet been made.

At the Chicago meeting of the American Association for the Advancement of Agricultural Teaching, in 1919, the following resolutiton relating to this topic was adopted:

> *Resolved*, That in case there are additional grants of Federal funds to the agricultural experiment stations, it is the belief of this association that provision should be made for research in agricultural education, agricultural economics, home economics, and such other subjects as pertain to the rural community.

AGRICULTURAL EXTENSION.

The following statement shows in a general way the scope and principal objectives of the agricultural extension program of the United States Department of Agriculture in cooperation with the colleges of agriculture, with particular reference to the activities of the past two years:[1]

At the beginning of the fiscal year 1918–19, the emergency appropriations, providing funds to increase production, were in force; they amounted to $6,400,000 for the employment of county agents, and boys' and girls' club leaders. However, in 1919–20 these appropriations were discontinued, and in lieu thereof Congress appropriated $1,500,000 to be used under the same conditions as the funds provided under the Smith-Lever Act. Therefore, the first problem that presented itself to the extension workers in 1919–20 was that of increasing funds from sources within the State. In 1918–19, the total funds from within the State amounted to slightly over $5,600,000, which was increased to nearly $8,500,000 in 1919–20, while the

[1] Prepared under the direction of Dr. A. C. True, U. S. Dept. of Agriculture.

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amounts received from the Federal Government for these two years were $9,000,000 and $5,800,000, respectively. It is also interesting to note that of the increase of $2,800,000 within the State, $1,600,000 came from sources within the county and $1,200,000 from funds under the immediate control of the college or provided by action of the State legislature.

The second problem presented to the extension workers was the organization of the counties during 1918–19 in such a way that as many as possible of the agents could be retained, in spite of the fact that the expenses of the extension work were increasing and the funds were decreasing. This meant that the counties had to be organized, in order to carry on extension work, so that they would contribute funds necessary to conduct the work. This was accomplished rather successfully with the men agents. The counties with men agents on July 1, 1918, numbered 2,435; they decreased to 2,250 on July 1, 1919, and to 2,030 on July 1, 1920. In other words, although the number of agents increased 1,000 between 1917 and 1918, or 70 per cent, the decrease was only 20 per cent between July, 1918 and 1920.

When the war began, the work with women had not been very thoroughly established in the Northern and Western States. However, between July 1, 1917 and 1918, the number of counties with home demonstration agents in the 48 States increased from 537 to 1,715. The number of home demonstration agents on July 1, 1920, was approximately 800. This is the number that should have been if the growth had been normal.

During the war, the method of marketing agricultural products was greatly upset. There was a rapid rise in prices and an unusual demand for certain products, such as pork and wheat. During these two years, the agents were actively engaged in helping the farmers to organize, so that the latter could market their products to the best advantage. Some of these organizations are the live-stock shipping associations, wool pools, cotton-classing associations, milk-producers' associations, farmers' elevators, etc.

On account of the income tax, the farmers have been compelled to keep some kind of records of their receipts and expenditures. This has resulted in a very marked demand for farm accounting records on farms. Owing to the rapid changes of prices in many interests, the farmers felt that they were selling their products at less than the cost of production, but they had no definite records or methods of accounting by which they might verify the truth of the proposition. This has led to a demand for cooperation on the part of the extension agents with the farmers in outlining the cost of production by records which the farmers can keep, in order to defend themselves when asked for a change in prices.

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II. AGRICULTURE IN SECONDARY SCHOOLS.

SCHOOLS AND ENROLLMENTS.

The development of vocational agriculture, although somewhat retarded because of the war and on account of the scarcity of qualified teachers, has progressed favorably during the past two years. The number of schools offering vocational courses in agriculture and receiving the benefit of the Smith-Hughes fund has more than doubled during the two years covered by this report. The number for 1920 was 1,375 as against 609 for the year 1918. The most conspicuous gains have been made in the Western States. In the North Atlantic group of States the number of schools has increased during this period from 166 to 219; in the Southern group from 200 to 440; in the East Central group from 159 to 433; in the West Central group from 45 to 153; and in the Pacific groups from 39 to 121. The chief reason for the difference in the rate of development may be explained by the fact that the North Atlantic States had made greater advancement during the years preceding 1918 and had nearly reached the limit of the Federal appropriations.

From the standpoint of enrollments, also, the progress during the biennium has been notable. The total enrollment in agricultural courses in the Smith-Hughes schools has jumped from 15,453 in 1918 to 31,301, a gain of over 100 per cent. Here again the greatest gains are found in the Western States, particularly those in the West Central group, which show an average increase of 165 per cent.

Among the schools considered above are 86 for colored students in the Southern States. These schools have reported enrollments of agricultural students aggregating 1,725. The fact that the agricultural work in practically all of these schools has been established since 1918 suggests that there is a rapidly growing interest among the colored people for special training in agriculture.

Agriculture for disabled soldiers.—Under the provisions of the Smith-Sears act, 7,800 men who were disabled during their military service have completed or are now taking instruction in agriculture. Only about 10 per cent of this number are enrolled in regular four-year courses at the colleges of agriculture. A much larger proportion—approximately 40 per cent—are enrolled in secondary courses, either at the colleges or at State secondary schools of agriculture. The remainder are taking agricultural instruction at certain training centers in connection with military hospitals.

PART-TIME SCHOOLS.

With the establishment of strong secondary schools of agriculture throughout the country there has come a demand for short courses and evening classes for persons who can not spare the time to attend

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the regular classes of the all-day school. The colleges of agriculture in the past have given much attention to this type of instruction, especially that given in short winter courses and in summer courses. Many of them have conducted the so-called "movable school" throughout their respective States. All of these efforts have met with approval and have had a far-reaching influence upon agricultural development. The number of communities which the colleges could serve in their extension program has been limited, both from the standpoint of expense and by the number of instructors that could be made available during the season when the demand for the work occurs.

There has come, therefore, a general desire on the part of the colleges to extend their influence by establishing cooperative relationships with the local high schools in which departments of agriculture have been established. Such relationships provide for the conducting of short courses by the local agricultural instructor and for the assistance of specialists from the college. The committee on part-time instruction of the American Association for the Advancement of Agricultural Teaching has made a study of the nature and extent of part-time instruction in the secondary schools. From the information collected from a partial canvass of the conditions throughout the country, their report shows that 164 secondary schools are offering part-time instruction in agriculture. In four counties of Iowa 20 schools are giving such work. The State of Wisconsin offers opportunities in 30 schools; in New Jersey, 20 schools; in Indiana, 15 schools; in Ohio, 15 schools; in Montana, 14 schools; and in Georgia and Virginia, each 11 schools.

Concerning several classes of persons to whom this kind of instruction has been offered, and the duration of the courses for each, the committee makes the following classification:

1. School pupils in outlying school districts with a regularly employed all-day teacher or a special teacher employed for part-time work.

2. Groups of boys, usually over 16 years and under 21 years of age, who take a systematic course for three months or more during the winter, spending the entire day at school three to five days per week.

3. Groups of farm boys, usually between the ages of 16 and 21, who come in for systematic instruction for 90 to 150 minutes per day two or three times per week. Such instruction usually is given in short-unit courses and by the regularly employed teacher.

4. Adult farmers in short unit courses with meetings once or twice a week. The courses for this group are usually quite short and the method of instruction is especially adapted to adults. The teacher usually is assisted by county agents, experts from the agricultural colleges, and others.

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5. Men and women of all ages, meeting once or twice a week in evening classes. Such classes generally are conducted by the regularly employed teacher of vocational agriculture, although in some instances special part-time teachers have been employed.

A very pretentious program for part-time instruction has been instituted in Iowa, where a special organizer is employed by the State board of education for each county. Local groups are organized and a special teacher employed for each group. The organizer, in addition to teaching one of the groups, supervises the work for the whole country and follows up the home project work after the classes have disbanded.

Several other States, particularly Georgia, New Jersey, New Mexico, and Pennsylvania, have organized programs for part-time institutions, but there is a decided lack of uniformity in method. More rapid and more definite development can not be expected until sufficient time has elapsed to test the methods now in use. Several of the teacher-training departments in the colleges are now giving their attention to the problem and their investigations and recommendations are bound to have a marked influence upon the trend of extension teaching.

IMPROVED RELATIONSHIPS.

Better articulation with the colleges.—There is a growing disposition on the part of the colleges of agriculture to accept work in vocational agriculture at full value toward satisfying the requirements for admission. The faculty of the New York State College of Agriculture, for example, has adopted the following resolution bearing upon this subject:

> A vocational diploma in agriculture or home making from the University of the State of New York, or evidence of equivalent vocational training, will be accepted for admission to the New York State College of Agriculture. If the applicant does not present three units of foreign language he shall elect the equivalent amount of work in the university in one or more of the following subjects: Foreign language, English, mathematics, philosophy, psychology, history, economics, political and social science.

From the reports available it is shown that the agricultural colleges of 20 States grant full credit for the agricultural work done in approved high schools.

Better relations with the college extension service.—The contention that existed during the early development of vocational schools of agriculture concerning the respective fields of activity of the local agricultural instructors and the extension representatives of the agricultural colleges has almost passed. In most States a cooperative extension program has been worked out in which the local agricultural instructors are given a definite part. Not only does the agricultural

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instructor contribute to the extension program, but the extension specialists and county agents have been of great service in the promotion of agricultural education in the schools.

A special committee, appointed by the American Association for the Advancement of Agricultural Teaching for the purpose of studying relationships of the vocational schools to the extension division of the college, reported at the Chicago meeting in November, 1919. Among the recommendations made by this committee, the following are of special interest:

That the agricultural college and vocational agricultural education be recognized as indispensable to each other. Both are desirable and permanent.

That the county representatives of the agricultural college be recognized as desirable and permanent, for the purpose of promoting effective local agricultural improvement organizations, and for the purpose of rendering semiexpert services such as, on one hand, do not require a highly specialized extension expert, and, on the other hand, such as are unusual and take care of emergencies which local instructors can not meet.

That the need for county representatives of the agricultural college be recognized for purpose of leadership, not only in senior but also in junior extension service.

That the vocational instructors be intrusted with all of the local extension work with adults which they can carry without impairment of their service as teachers and with benefit to themselves as men of sound and growing experience in the affairs of farming.

That the vocational instructor be intrusted with the local leadership of junior extension work, with the privilege of inviting volunteers to help him, but with special responsibility himself for supervision of the work of boys 12 and 13 years old.

That frequent conferences be held jointly by extension and vocational workers for the discussion of policies and for the gradual perfecting of State and local team-work programs.

IMPROVEMENT OF TEACHING.

The necessity in many of the States for employing substandard teachers during the early development of agricultural work in the secondary schools, and especially during the period of the war, has emphasized the need for close supervision and for the professional improvement of teachers while in service. As a result, 36 States have employed special agricultural supervision on full time. In the remaining 12 States such an officer has been employed for part time only. The number of full-time supervisors has been increased by 16 over that for 1918–19.

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In addition to providing for supervision, 22 States have employed, either on full or part time, special itinerant teachers for the express purpose of training teachers while in service. The provisions for this type of work vary with the State. In some cases the itinerant teacher-trainer is maintained by the college of agriculture and constitutes an effort to follow up the work of their graduates who have entered the teaching service, although their efforts are not generally limited to their own graduates. In other States the itinerant teacher-training is supported by the State department of education. Massachusetts, which was one of the first to adopt this plan, belongs to this class, but here the work is centered at the college.

Professional training on the part of teachers is not a prerequisite to employment in this State, but men teachers who usually come with a broad technical knowledge are professionally trained by the project method. The task of training such men varies according to the needs of the individual. The program generally includes (*a*) personal assistance after installation; (*b*) special courses at the college planned to meet the needs of special groups; (*c*) professional improvement projects; and (*d*) follow-up work in the field.

Unlike the agricultural supervision, the teacher-trainer generally does not carry authority to enforce special methods. On the contrary, he goes about in the spirit of helpfulness. In this way he is able to establish intimate relations with the teachers. He soon becomes familiar with the peculiar weaknesses of the several teachers and is able to prescribe special training to meet the peculiar needs. He also becomes familiar with the local problems and is often able to straighten out difficulties that to the agricultural instructor might have been embarassing.

This work of itinerant teacher training, while primarily established in several States as an emergency measure to make up for the deficiencies of the teachers, has proved to be so effective that it is now generally regarded as a permanent part of the program for the development of agriculture in the secondary schools.

Various other plans have been developed for the purpose of improving the efficiency of the teachers. Some States, especially those in the west central region, have depended mainly upon frequent conferences. Such conferences furnish opportunity for discussing methods in use and for making plans for future work. Other States have pinned their faith to monthly information service leaflets. Twenty-six such leaflets, in either printed or multigraph form, are now in circulation.

IMPROVED METHODS OF INSTRUCTION.

Supervised practice.—The adoption of the home-project plan, or what is now more commonly known as the supervised practice plan,

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as an adjunct to secondary education in agriculture, has been general, especially in schools receiving aid from the Smith-Hughes fund. It is encouraging to note that during the past two years conscientious efforts have been made to improve the plan and to correlate the practice work more closely with the classroom instruction. It has been observed that there is a remarkable relationship between the financial return from the home project and the educational return from the whole course. Since the development of interest is one of the most important factors in educative process, it is natural for the students who are successful in their farm enterprises to derive the greatest benefit from their courses. Teachers and supervisors are emphasizing more and more the importance of selecting home projects which are likely to prove profitable. They are unanimous in their belief also that careful records should be kept of all transactions and that statements showing the earnings from each project should be required of all students.

Both as an indication of the educational benefit of the training and as an indication of the direct economic value of the work, it is interesting to note that for the past year the total financial return from the supervised practical work in 38 States amounted to $526,122.43, as reported to the Federal Board for Vocational Education. Other States have depended mainly upon professional improvement courses at the college during the summer. Many States, of course, have employed two or more of these special methods and several have employed every known means for improving the quality of instruction.

Reorganization of curricula.—The subcommittee on agriculture for secondary schools of the Bureau of Education advisory committee on agricultural education, at its meeting on March 7, 1919, made the following recommendation:

1. The immediate attention of the committee is to be restricted to formulating vocational courses of the occupational extension type, that is vocational courses which are predicated upon the assumption that the pupils who are to take these courses have a background of farm experience and have an opportunity for extending and continuing that experience in connection with the instruction.

2. The subject matter to be used in making up courses is to be formulated as units, such as bean growing, potato growing, apple growing, pig raising, farm butter making, etc.

3. Courses of instruction of varying lengths and varying content may then be made up by combination of units. This would in a measure overcome some of the difficulties attendant upon an attempt on the part of the committee to formulate a uniform course of study which would in any way be suitable to the varying conditions in the United States. The particular units to be combined for any course

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would depend upon such factors as the farming of a locality and upon the amount of time which is to be given to such instruction. State and local authorities will determine suitable combinations of units for given localities.

4. In organizing the subject matter of these units the production order, in general, will be followed rather than the so-called logical order usually followed in textbooks on agriculture.

5. These units will set forth the practical procedure together with such information as is necessary to carry out good practices. Parallel with this there will be an arrangement of the science content which underlies and can be correlated with such practices. In the field of crop production, for instance, practically all of the fundamental science involved in crop production can be correlated with any one of the crop units.

6. Certain of these units will be put up in two forms: (1) A short unit, to be used in sections where that particular phase of agriculture is incidental or a minor; and (2) special units, to be used in those sections where that line is a major or a specialty.

7. The best prepared men in the country will be requested to write these unit courses. In order to secure definiteness of aim and uniformity of arrangement of content, it is suggested that the subcommittee be instructed to draw up detailed specifications in harmony with the foregoing statements for the preparation of these units.

8. The subcommittee feels that whatever may be put up in the way of content there should be very carefully worked out by the subcommittee a statement of principles which should govern the arrangement and methods of teaching these units.

In harmony with recommendation seven, several persons have undertaken the development of unit courses based upon the results of an analysis of the particular enterprise selected. One on poultry raising and another on swine raising are being worked out by specialists in the department of agriculture. Others on various subjects have been prepared in the department of agricultural education of the Kansas State Agricultural College. An exceptionally well-developed course on sheep raising has been developed as a thesis in partial fulfillment of the requirements for the degree of doctor of philosophy, by Dr. J. H. Green, of the University of Illinois. Prof. C. B. Waldron, of the North Dakota Agricultural College, under the direction of Dean R. W. Selvidge, of the University of Missouri, has developed along similar lines a course on general agriculture.[2] This course is one of a series prepared for use in Army posts, but is worthy of more general adoption. It is based upon what is known in the Army as the applicatory method of

[2] U. S. Army Educational Manual No. 10, 1920.

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teaching. The peculiar value of this method, as claimed by those responsible for the training of men in the military service, is that it develops "coordination of mind and body and ability to think quickly and independently in emergencies."

III. AGRICULTURE IN THE RURAL ELEMENTARY SCHOOLS.

The development of a rural school program based upon the interests of the child and upon the life of the community has been the dominant aim of the leaders in rural education during the recent years. Various plans have been suggested to bring about this result, and several interesting experiments are under observation. In general, the plans proposed are lacking in definiteness and for this reason teachers are slow to adopt them. Since communities differ in their interests, there are bound to be differences in detail; but when the teachers, who are to take the responsibility for teaching in the rural schools, are started out with this ideal and know how to analyze the life of the community and discover therein the materials which may be used for agricultural instruction, we may hope for rapid progress in this direction. Many of the normal schools are now beginning to specially prepare teachers for teaching in rural districts. They are becoming more conscious of the educational needs of the rural community and are endeavoring to turn out teachers with the proper attitude toward rural life and possessed with a determination to help in the upbuilding of the rural community.

With a view to helping teachers analyze the life and affairs of their respective communities, the University of Wisconsin has issued a pamphlet entitled "Social Surveys of Rural School Districts."[8] The author, Prof. C. J. Galpin, in recommending the survey method of obtaining information about the community, has this to say:

> Sowing the seeds of civilization in the hearts of the children is doubtless opportunity enough to call forth the best that is in you. But suppose over and above this rare inducement to your labors you could take a hand in the material development of your State and see the results of your work maturing from year to year while you are waiting for education to blossom in the spirit of the children. This is precisely the challenge put up to you in the plan set forth in this circular. . . .
>
> It is the purpose of this publication to show how to mobilize the intimate facts of farm life which surround you; how to utilize these facts so as to produce community growth.

The modification of the rural curriculum to meet the needs of the rural people necessarily means that more attention must be given to agriculture as the dominant interest of rural communities. In other words, farm life must form the basis of the course of study.

[8] Extension Service of the Department of Agriculture, Circular 122, 1920.

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At the 1919 meeting of the National Education Association, Prof. G. M. Wilson made a statement which fairly expresses the belief of many of the leading educators concerning the changes in the curriculum and the methods of teaching which must prevail if the rural school is to function properly in the life of the people it is intended to serve. After indicating how the methods of teaching some of the traditional subjects will need to be changed to meet these new requirements, he states:

> This will mean a decided saving in time, which can be used in a more thorough mastery of the processes which are useful and fundamental, or for other purposes. In short, there must be a positive program of studies that is based squarely upon pupils' interests, community relationships, and the functional conception of education. It means that the purposes of education must be accomplished rather than that subjects as such shall be taught. The program of work must be broadened to include the vocational type. The old studies which, because of their handling, have not served the aims of health, citizenship, and education for leisure, must be recast to serve these aims, and in addition, vocational efficiency and effective home membership must be realized through new material which shall be organized into the curriculum. The result of this reconstruction of the course of study will be an entirely different product. Not a pupil stuffed with facts, dissatisfied with rural conditions, and unable to realize the larger aims of education; but instead an individual who thinks in terms of the problems of present-day life, has at hand the tools and the methods for their solution, is thoroughly in sympathy with his environment; and is an exemplification of the recognized educational aims, health, good citizenship, vocational efficiency, and the right use of leisure.

The reorganization of the rural school curriculum on this basis is bound to be a slow process. The number of schools in which the curriculum is centered around agriculture and country life is extremely small. The chief retarding factor is the difficulty of securing teachers who are qualified to teach by any other than traditional methods. Some conspicuous results, however, have been obtained, largely through the efforts of certain leaders in the training of teachers while in service.

The four-year rotation plan.—The results achieved in certain counties of Missouri have attracted considerable attention. The following extracts, taken from a bulletin issued by the county superintendent of schools of Nodaway County, briefly describe their four-year rotation plan for teaching agriculture in rural schools:

> The word "agriculture" as used in our county refers not only to the subject directly pertaining to farming but also to anything pertaining to the life and welfare of the children and the people of the community—health, sanitation, home conveniences, social conditions, and community interests. In fact, it includes anything which enables us to teach in terms of the lives of the people and the needs of the community. It is really vitalized rural life.
>
> *Teach growing things.*
>
> First year. Farm crops; how seeds grow; depth to plant; corn; oats; alfalfa; weeds; gardens; canning; drying.

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Making things.

Second year. Making nail box, wash bench, book rack, etc.; rope knots; splicing rope; cement tanks, steps, and posts; farm tools and machines; removing stains; sewing.

Live things.

Third year. Animals; diseases and remedies; how to feed; testing milk; poultry; useful birds; insect pests; setting the table; hot lunch.

Soil and home.

Fourth year. Soil fertility; cultivation; moisture; sanitation; beautifying the home; social and community work.

We study the silo, feed, grain, garden, preserving crops, birds, pictures, home conveniences, and serving hot lunches from the standpoint of what each community is doing and what can be done to make things better. This gives a motive for our work, a reason for reading, a reason for arithmetic, a reason for writing letters. We study the things themselves; we let the children themselves do the things we want done.

The clever teacher, under our old system, had the boy figure the contents of a haymow in order to fix in his mind certain principles of arithmetic. This is teaching arithmetic in terms of the life of the boy. It is good arithmetic, but it is not yet good living.

Under our new system the boy figures the contents of the haymow because he or his father wants to know how much hay there is and how long it will feed their dairy herd. This is studying real things and using the arithmetic to help the boy find out something he wants to know.

When the four years' work is finished we will start in again with the first-year's work. By this time the older pupils will have graduated and the work will be new again to both teacher and pupils. This plan makes it possible for us to give the pupils more agriculture; keeps the work live and real and vital; and makes it easier for us to supervise the work. It is relatively easy for us to train our teachers for one line of agricultural work each year, while it would be impossible for us to train them for all lines of work.

How the work was started.—Our county was 1 of 15 in Missouri, selected by former State Supt. Uel W. Lamkin, to try out the rotation plan. Under the direction of the State department of public instruction, and Prof. P. G. Holden, the county superintendents received a week of intensive training at Jefferson City, Mo.

Acting upon their suggestion we started with only a small group of teachers. It was a new thing, and we were urged to begin with a group small enough so that we could carefully supervise the work and give the scheme a fair chance.

We chose five capable teachers whom we judged were teaching in communities progressive enough to try out a new thing—the community was considered as much as the teacher in making our selections.

Before beginning the work the teachers had the benefit of a week's training under the same direction as the county superintendents.

Much of the success of this work is due to the regular weekly conferences we held with the teachers who were doing the work. In these conferences we did the very things that we expected the children to do. We went to the fields, determined the stand of corn, compared the yields of fields where the stand was good with the fields where the stand was poor, and figured out what it meant in dollars and cents.

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All of this was extra work for the teacher, and we warned the teachers that they should not go into this work if they were looking for a soft snap. The common consensus of opinion with this group of teachers was that the work was hard but that the interest, enthusiasm, and life in their schools and in their communities so much more than made up for it that they would not think of giving it up.

After each conference each teacher went to her school loaded with material and with a clear idea as to just what she was going to do in her school.

These conferences were conducted by the county superintendent. Occasionally we took advantage of our unusual opportunity to call in members of the faculty of the State Teachers' College to present some special phase of the work.

The first year we had 5 schools in the work, the second year there were 16; this year there are 35. These teachers are held responsible for attending the conferences and for successfully carrying on the work in their schools.

The agricultural instruction service of the United States Department of Agriculture.—The division of agricultural instruction of the Department of Agriculture, through cooperation with the teachers in service, has done much to encourage agriculture in the rural schools. The nature of such cooperation during the past two years may be described briefly as follows:

1. By furnishing information concerning helpful material for instruction and how it may be used.

2. By emphasizing the value of community surveys and showing how they may be conducted.

3. By encouraging the teachers to follow the home-project plan through boys' and girls' club work.

4. By encouraging the use of lantern slides and moving-picture films and by establishing circuits for the distribution of visual instruction material.

5. By the publication and distribution of bulletins of use to teachers. The lessons on dairying, on potatoes, and on gardening are examples. Other publications furnish suggestions to teachers on how they can make use of certain Farmers' Bulletins published by the department.

6. By cooperation with State departments of education and State agricultural colleges in preparing suggestive outline courses of study in agriculture for elementary schools. Such a course has been prepared for the Ohio elementary schools and one is under preparation for use in the schools of Arkansas.

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DEPARTMENT OF THE INTERIOR
U. S. BUREAU OF EDUCATION

BULLETIN, 1921, No. 41

EDUCATIONAL WORK OF THE BOY SCOUTS

By

LORNE W. BARCLAY

DIRECTOR OF THE DEPARTMENT OF EDUCATION
BOY SCOUTS OF AMERICA

[Advance sheets from the Biennial Survey of Education in the United States, 1918–1920]

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EDUCATIONAL WORK OF THE BOY SCOUTS.

By LORNE W. BARCLAY.

Director of the Department of Education, Boy Scouts of America.

CONTENTS.—Scouting and the schools—Scouting and citizenship—The pioneer scout—Seascouting, a branch of the Boy Scouts of America—National Councils endeavor to discover vital facts in regard to the boyhood of the Nation—International aspects of scouting—Scout handbooks, organs, and other literature—Motion pictures for boys.

SCOUTING AND THE SCHOOLS.

Scouting continues to enjoy the cordial indorsement of school men everywhere all over the country. More and more those interested are coming to see the enormous possibilities of cooperation between the scout movement and the schools. Many schools now give credit for scout work done outside of the schools. Many more are in hearty sympathy with the program as an extraschool activity.

In 1919 there were organized in connection with public schools 1,942 troops and 170 in connection with private schools. The records also show that for the same year 1,623 scoutmasters were also school-teachers. Many troops have their meetings in the school buildings and in turn render good service by taking charge of fire drills, first aid and safety first instruction, yard clean ups, flag drills, etc.

Scout leaders take the utmost pains to see that scout activities do not in any way interfere with school duties, and troop meetings are regularly held on Friday evening for that reason. The best results have been obtained not by formalizing scouting, but by supplementing and vitalizing the book work by the practical activities of the scout program. Through scouting many a boy's healthy curiosity to know has been whetted, so that he comes for perhaps the first time in his life to see " sense " in books. As one school man has said, " Scouting has done what no other system yet devised has done—made the boy *want to learn*."

The National Education Association, meeting in Chicago in 1919, had a special scouting section which was particularly helpful, interesting, and conducive to closer cooperation between the scout movement and the public schools.

The department of education of the National Council is at present engaged in working out the development of a national policy governing the relations between scouting and the schools, for important and

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successful as the work has hitherto been, it is believed that only the very outskirts of the possible fields of mutual helpfulness have yet been reached.

SCOUTING AND CITIZENSHIP.

The making of good citizens is one of the chief aims of the scout movement. Everything in its program contributes directly and indirectly to this end. Every boy who associates himself with the movement is impressed with a sense of personal responsibility. If he sees a heap of rubbish that might cause a fire or collect disease-carrying germs, he is taught to report these traps to the proper authorities without delay. He is enlisted in every movement for community betterment and good health. Scouts are organized for service and have participated in hundreds of city-clean-up and city-beautiful, and "walk-rite" campaigns. They fight flies and mosquitoes and fever-carrying rats. They assist forest wardens and park commissioners in preserving and protecting trees and planting new ones. They help the police in handling traffic in crowded conditions, as in parades, fairs, etc., and work with fire departments in spreading public information as to fire prevention, as well as actively participating in cooperation with fire brigades.

All this means the making of an intelligent, alert, responsible citizenry, dedicated to being helpful to all people at all times, to keep themselves physically strong, mentally awake, morally straight, to do their duty to God and country.

THE PIONEER SCOUT.

In order that boys who live in remote country districts may enjoy the benefits of the scout training, even though it is not possible for them to join a regular troop, the Pioneer Division of the Boy Scouts of America has been established. Pioneer Scouts follow the same program as other scouts do, taking their tests from a specially appointed local examiner, usually a teacher, pastor, or employer. On January 31, 1920, there were 758 active Pioneer Scouts on record at national headquarters. Much interest has been manifested in this branch of scouting, which has been found to fill a real need among country boys. The State agricultural departments and colleges have given generous aid and indorsement, as have also the Grange, Antituberculosis League, and other local institutions. The United States Department of Agriculture is also lending its hearty support and indorsement to this branch of scout work. The Secretary of Agriculture, the Hon. E. T. Meredith, says: "The Boy Scout program fits in with the work of the rural school, the rural church, the agricultural boys' club, and other rural welfare organizations. They should go hand in hand."

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SCOUTING AND AMERICANIZATION.

Mr. James E. West, Chief Scout Executive, makes the following statement in his tenth annual report rendered to the National Council, Boy Scouts of America:

The tremendous value of the Boy Scout movement in the Americanization problems of this country has been recognized by the division of citizenship training, Bureau of Naturalization, Department of Labor, from whom was received a request that Boy Scouts distribute letters and cards among aliens in the interest of the educational work of the division of citizenship training. A study of the indorsements of the movement by national leaders (selected from the many received) will reveal similar recognition in such quarters. Many leaders in the organization, from coast to coast, have long recognized that the Boy Scouts of America enjoy a high privilege as well as a high responsibility in truly democratizing the boyhood of this country.

The foreign-born boy and the son of foreign-born parents sit side by side with native-born boys (as they should) in our schools. They mingle in their play and in their homes. They are one boyhood. But it is a boyhood of marvelously diverse racial characteristics and tendencies. Moreover, this boyhood is the future manhood of America. And the boy inside each individual in this 8,000,000 or so of American youth instinctively responds to the Boy Scout program. As America is the melting pot of the nations, even so scouting is the melting pot of the boys of the nations.

Fortunately, the program needs no modifications or special manipulation to "Americanize" its followers. It is inherently an Americanizing program. In Manhattan's crowded East Side, since 1912, when the first scout troop was founded there, thousands of boys have taken the Scout Oath and Law and followed its principles and lived its out-of-door life. To-day there are 25 troops in New York City, numbering 800 boys. Every scoutmaster and assistant scoutmaster in the district is an ex-scout. These troops have a splendid record of war-service work, and it has been declared of them that they were the greatest single agency in operation rightly to interpret the war to their foreign-born neighbors.

The aggressive introduction of scouting into all our industrial sections, the enlistment of the men of those sections (who are eligible) as local council members, troop committeemen, scoutmasters, the fullest possible round of scouting activities for the men and the boys in this country who do not yet know America, but aspire to be her sons, will help to solve all our industrial problems and preserve our national ideals and institutions.

SEA SCOUTING—A BRANCH OF THE BOY SCOUTS OF AMERICA.

Sea scouting is another important branch of scouting which aims to develop water scouting and nautical activities and training of all sorts. Chief Sea Scout James A. Wilder says:

Sea scouting is the way whereby scouting fulfills its obligation to the American boy to prepare him for emergencies on water as well as on land. High officials of the Navy and the merchant marine have expressed their unqualified approval of the entire program of seamanship, watermanship, cloud study, sailmaking; boats under oars and sail, shore camping, and the other fascinating activities. Our merchant marine languishes for lack of instructed seamen. It is not a far cry to the time when boys who have followed the seascout program will be

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found in the four quarters of the globe, doing business on great waters because they, as sea scouts, received the same training which helped keep our flag flying on the seven seas.

During the year 1919 the sea scouting department tripled its membership and had regularly commissioned ships in 19 States. It is essentially an older-boy plan and is not a substitute for scouting but a development of it. Only boys over 15 years of age are eligible to join a sea scout ship, though a preliminary rank, that of Cabin Boy, is open to younger scouts who are able to meet certain tests in "water preparedness" and take the Sea Promise.

THE SEA PROMISE.

On my honor, I will, as a scout and as a cabin boy, do my best to become proficient in scouting.

1. To learn swimming and always "be prepared" to render aid to those in need in connection with water accidents.
2. To make it my practice to know the location of the life-saving devices aboard every boat I go on, and to outline mentally any responsibility in maintaining order for myself and shipmates in case of emergency.
3. To be vigilant and cautious, always guarding against water accidents.
4. To cooperate with the responsible authorities for the observance of all regulations for the conduct and safety of boats and ever seek to preserve the motto of the sea, "Women and Children First."

Like all scouting, sea scouting is both recreation and education. A sea scout has a jolly good time in the water and on it, but at the same time he is acquiring a tremendous amount of practical knowledge and nautical efficiency which will stand him in good stead whether he follows the sea or not.

NATIONAL COUNCIL'S ENDEAVOR TO DISCOVER VITAL FACTS IN REGARD TO THE BOYHOOD OF THE NATION.

Earnest search reveals the lack of any comprehensive and uniform data as to the youth of the Nation, although such data are absolutely essential if we are to reach every boy and assure him the educational and other opportunities to which he is entitled. At the instigation of the chief scout executive, Mr. James E. West, the National Council of the Boy Scouts of America is endeavoring to start in motion an aggressive campaign in the ascertaining and collecting of such facts. Each local council is charged with the responsibility of studying conditions in its own locality. Realizing the importance of making this study of nation-wide extension, the National Council, at its last annual meeting (March, 1920), passed the following resolution:

Whereas the National Council of the Boy Scouts of America regard it of the utmost importance that there should be available for use by the Boy Scouts of America and other organizations interested in the welfare of the youth of the Nation all possible data relating to this subject; and

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Whereas investigation has proved that pracically no uniform data of this sort are at present available as a basis for a thorough study of the situation and further development of their respective programs for service to the youth of our Nation:

Resolved, That the National Council of the Boy Scouts of America in tenth annual meeting now assembled requests that the Federal Government and the various States of the United States shall, at their earliest conveniences, through their various appropriate departments, collate and make available for our use and that of other organizations such data as will provide intelligent, efficient, and economic promotion of the program devoted to making of good citizenship, and

Be it further resolved, That the United States Bureau of Education, Census Bureau, and the Department of Child Welfare be especially urged to collate such data as are absolutely necessary for a thorough investigation of the problems involved; and

Be it further resolved, That if sufficient funds are not at the present time available for this absolutely essential purpose, the Congress of the United States and the legislatures of the various States of the Union be urged to immediately make such appropriation as may be necessary for carrying out this purpose.

INTERNATIONAL ASPECTS OF SCOUTING.

Scouting as a world movement was represented in the summer of 1920 by the International Scout Jamboree held at London, England, at which delegates were present from 34 of the 53 nations in which scouting is definitely established. The Boy Scouts of America were represented by a group of about 250 scouts and scout leaders representing the whole country. The gathering was most interesting and impressive in every way, and the value of the scout movement in training boys to healthful, useful activities by a program which is both educational and recreational was triumphantly demonstrated. Aside from their participation in the jamboree itself, the trip was of immense value to our own boys, as it allowed of extensive visiting of points of interest and historic association both in England and France, and in Belgium, where the delegation was reviewed by King Albert, of Belgium.

At the invitation of the American Committee for Devastated France, the National Council loaned its department of education director, Mr. Lorne W. Barclay, to be in charge of the scout camp at Compiegne, France, on the bank of the Aisne.

SCOUT HANDBOOKS, ORGANS, AND OTHER LITERATURE.

Handbook for Boys.—The Handbook for Boys continues to be increasingly in demand. Two or three printings of the book are required annually, each printing including a 1,000,000 edition, to supply the demand for what is said to be the most popular boy's book in the world. It is now in its twenty-fourth edition and is the official interpretation of the scout movement.

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Leaders' handbooks.—The new Scoutmaster's Handbook contains a wealth of valuable material for scout leaders and other adults interested in the movement. It is prepared by experts and based upon sound pedagogical principles as well as good scouting. The new handbook for executives, called Community Boy Leadership, is now in circulation and is proving valuable.

Magazines.—Boy's Life, the official scout magazine for boys, is a live, wholesome, interesting publication issued monthly, containing stories and articles by well-known authors and specialists.

Scouting, issued monthly, is prepared especially for scout leaders not under council, while The Scout Executive, another monthly bulletin, is directed chiefly to the field under council.

Merit Badge pamphlets.—The editorial department of the Boy Scouts of America has prepared and edited a series of valuable pamphlets in connection with the Merit Badge subjects, which is filling a long-felt want among scouts and others interested. There are 68 different pamphlets, each written by a recognized authority in the respective subject, and each submitted before printing to a large number of experts, over 500 of whom were consulted for critical suggestion and guidance. No effort has been spared to make these booklets accurate and interesting. They contain over 3,000 pages of printed matter and over 800 illustrations, as well as valuable bibliographies and biographical matter. The pamphlets have already attracted considerable favorable notice among school men, and several colleges are placing the whole series in their reference libraries.

A classified list of the subjects for which pamphlets have been issued follows:

I. *Subjects that have to do with outdoor activities.*

1. Angling.
2. Archery.
3. Camping.
4. Cooking.
5. Cycling.
6. Hiking.
7. Horsemanship.
8. Marksmanship.
9. Pathfinding.
10. Photography.
11. Pioneering.
12. Seamanship.
13. Stalking.
14. Swimming.

II. *Subjects that have to do with outdoor activities of a vocational nature.*

1. Agriculture.
2. Beekeeping.
3. Bird study.
4. Botany.
5. Conservation.
6. Dairying.
7. Forestry.
8. Gardening.
9. Poultry keeping.
10. Taxidermy.

III. *Subjects which have to do with modern application of mechanics.*

1. Automobiling.
2. Aviation.
3. Electricity.
4. Machinery.
5. Signaling.
6. Wireless.

IV. *Subjects which have to do with the preservation of health and the saving of life.*

1. Athletics.
2. First Aid.
3. First Aid to Animals.
4. Firemanship.
5. Life Saving.
6. Personal Health.
7. Physical Development.
8. Public Health.
9. Safety First.

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V. *Subjects which have to do with so-called "Trades."*

1. Blacksmithing.
2. Carpentry.
3. Craftsmanship, including Craftswork in Metal, Leather, Basketry, Pottery, Cement, Bookbinding, Wood Carving. (7 separate pamphlets.)
4. Handicraft.
5. Leather working.
6. Masonry.
7. Mining.
8. Plumbing.
9. Printing.
10. Surveying.

VI. *Subjects which have to do with knowledge gained mainly from books and laboratories, under instructors.*

1. Astronomy.
2. Chemistry.
3. Business.
4. Civics.
5. Interpreting.
6. Scholarship.

VII. *Subjects which have to do with some form of art.*

1. Architecture.
2. Art.
3. Music (including Bugling).
4. Painting.
5. Sculpture.

Other literature.—The National Council also issues a large number of other informational and interpretative publications, such as the Manual of Customs and Drills, The Seascout Manual, What Every Scoutmaster Wants to Know, Scouting and the Public Schools, Your Boy and Scouting, What Scouts Do, Membership in the Boy Scouts of America, The Boy Scout Movement (as approved by the Religious Education Association), etc.

Cooperation with publishers.—The department during the year has maintained through its director constant contact with publishers and authors. More than 100 new books published for boys in 1919 have been carefully examined (a good many in manuscript form) for review in Boys' Life or inclusion in some one of our book lists and, of these, of the few really good books for boys published in 1919, it is a joy to report that more than half of these were first published serially in Boys' Life, a record that stands alone.

New books edited.—The director has edited as usual the Boy Scouts' Year Book, compiled from last year's issues of Boys' Life, the sales of which have been more than a third larger than in previous years. More notable still has been the success of the Boy Scouts' Book of Stories, a compilation of stories of interest to boys selected, one each, from the writings of our best American and English short-story writers. The purpose of the director in editing such a book was to interest boys in stories that have the quality of fine writing, and so help to develop in them a taste for literature that will make them lovers of the great and good books of all ages. The very nature of the book warranted the conclusion that it would take considerable time to make it a good seller. Once again the unexpected has happened in that the first year's sales of the Boy Scouts' Book of Stories has equaled the first year's sale of the Boy Scouts' Year Book, and the present promise is that for years to come this

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book will more than hold its own. In the coming year material is being gathered for a companion volume to be published under the title the Boy Scouts' Book of Stories in Verse.

Motion pictures for scouts.—The director of the library department of the National Council, Mr. Franklin K. Matthews, has served as a literary adviser to a motion-picture company. As a result of this collaboration a large number of educational and scout films have been put into circulation, including the popular "Knights of the Square Table," by Chief Seascout James A. Wilder. It is believed that these films offer splendid opportunities not only to show the educational possibilities of the scout movement but also to interest and instruct the public in the joys and benefits of outdoor life, the necessity for safety first and fire-prevention measures, and other features which are accentuated by the scout program. The films can also be admirably used in connection with the Americanization movement.

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DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

BULLETIN, 1921, No. 42

TEACHER PLACEMENT BY PUBLIC AGENCIES

By J. F. ABEL
SPECIALIST IN RURAL EDUCATION
BUREAU OF EDUCATION

[Advance Sheets from the Biennial Survey of Education in the United States, 1918–1920]

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TEACHER PLACEMENT BY PUBLIC AGENCIES.

By J. F. ABEL,

Specialist in Rural Education, Bureau of Education.

CONTENTS.—Difficulties in filling teacher positions—Appointment committees as service organizations—Demand much greater than supply—Methods in placement work—Special policies—Follow-up work—Bureaus in State offices—National placement bureaus—School board service.

DIFFICULTIES IN FILLING TEACHING POSITIONS.

For the biennium ending June 30, 1920, filling educational positions of all kinds assumed an importance scarcely thought of in previous years. Not enough even of untrained, inexperienced persons could be secured at any time during the two years to fill the teaching places of the country. The number—always too small—of trained, experienced workers who were willing to stay in the profession was greatly reduced. Military service took the best of the younger men teachers; governmental services newly initiated or greatly expanded to meet war-time needs called away the more active and progressive women; the Young Men's Christian Association, Knights of Columbus, Red Cross, other relief organizations, and the scientific and technical branches of the varied war industries drew heavily from the ranks of principals, superintendents, and college faculties; the business world found remunerative places for educators; and the creeping slowness with which teachers' salaries were advanced to meet the increasing cost of living drove many to try other lines of work. In September of 1918 there was a shortage of 50,000 teachers, and 122,000 inexperienced ones were entering the field. Approximately 10 out of every 45 of all the teaching places were either vacant or filled by new people. The shortage increased throughout the period. Fewer students took courses in education, the annual output of graduates from the colleges of education and the normal schools was decreased and campaigns to reenlist former workers were not markedly successful. In June of 1920 there was no apparent way of securing the 15,350 high-school teachers necessary to complement the force for secondary instruction.

APPOINTMENT COMMITTEES AS SERVICE ORGANIZATIONS.

This situation changed the attitude of the board of recommendation, appointment committees, placement bureaus, or other organizations in higher educational institutions and State departments designed to serve as clearing houses for positions and workers. From

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being bodies whose chief function was to help young people secure positions, they became service organizations to help fill the schools with workers. In June of 1920 reports were received at the Bureau of Education from 260 institutions, representing 120 smaller colleges, 19 larger universities, 23 State universities, 25 technical schools, 55 State and private normal schools, 7 county normals, and 11 city normals. Below is a tabulation of the returns:

Requests for teacher positions—Number of places filled.

Institutions reporting.	Number of schools reporting.	Number that have an organization for placing teachers.	Number that have no such formal organization.	Number that kept records of placement work.	Requests received for nominations to fill vacancies.	Positions reported to have been filled.	Number of registrations with placement organizations.
Smaller colleges	120	74	46	47	8,040	1,979	2,121
Larger universities	19	19	.....	15	15,126	2,550	3,594
State universities	23	23	.....	14	13,280	3,025	9,702
Technical schools	25	15	10	6	1,695	387	376
Normal schools	55	41	14	29	13,571	4,260	4,644
County normals	7	.....	.....	.....	.....	.....	.....
City normals	11	.....	.....	.....	.....	.....	.....
Total	260	172	70	111	51,712	12,196	20,437

DEMAND MUCH GREATER THAN SUPPLY.

Without exception all of the 260 institutions that reported to the bureau indicate that the requests for teachers were far in excess of the supply available for placement. The 46 smaller colleges and 14 normals that have no formal placement organizations report all of their available people taken so quickly as to make bureaus unnecessary. The 10 technical schools report that none of their graduates cared to teach. County and city normals are as a rule parts of a larger administrative system, and their output is immediately taken over by the system. Sixty-one of the institutions reporting did not keep records of their placement work. Usually those were cases in which it was the part-time duty of some already overworked person or committee. The number of positions reported to have been filled is much less than the number that actually was filled. School boards and registrants alike are prompt to express dissatisfaction but singularly neglectful about reporting successful placements. Boards may and often do ask several institutions to make nominations for the same position or positions, so there is undoubtedly embodied in the 51,712 requests a considerable number of duplications. This is easily offset by the fact that many of the requests were for more than one teacher—a fact noted but the figures not given by the persons reporting—and that large numbers of requests came to those schools that kept no record. An estimate of three times as many requests as registrations is conservative.

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METHODS IN PLACEMENT WORK.

While placement work is handled in many different ways in the different institutions, in some of the larger schools it is provided for in the regular budget and has taken on the character of a high-class professional service. In most of these the plan of operation and the policies followed are fairly uniform. The bureaus are organized for and deal primarily with the students, alumni, and graduates of the school in which the bureau is located. As a rule there is no charge for the service. If there are fees, the amount is small and may be merely to cover the cost of postage and typing. A statement of the registrant's personal characteristics, his experience, and a list of references are required from him. From his instructors and professors estimates of his work and ability are obtained. These written estimates are held to be strictly confidential, are sometimes required to be couched in moderate terms, and to apply only to those things about the registrant of which the writer is directly informed. General letters of recommendation are not as a rule accepted. No schools have reported the use of intelligence tests or intelligence ratings in placement work. The institutions do not recommend, and many of them send out credentials only at the request of school officials. Sometimes the papers of several persons are submitted. Usually but one nomination is made. In general the purpose of the bureau is to give board and registrant a knowledge of each other and leave them to work out their own arrangements.

SPECIAL POLICIES.

Apart from the general policies of placement adopted and followed by most schools, certain ones are following unusual lines much of the time, and many did special work during the war. One of the larger normals discouraged any tendency on the part of its graduates to accept positions that would group any great number of them in any one city, town, or county; tried to distribute its supply of trained people fairly equally and widely over the State; divided its graduates into three salary classes and advised each to ask for the salary of the class in which she was placed, and requested that all seniors make no teaching contracts until after Easter, in order that during the process of salary readjustment the seniors would not come in competition with older experienced teachers. It also made a special effort to supply teachers to those schools from which it was receiving students.

Many bureaus registered nongraduates and graduates of other schools. While this was primarily to meet the emergency and was sometimes accompanied by a refusal to make nominations for positions in other States and sometimes even in the territory within the

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State not usually served by the school, there is still a definite desire on the part of a number of institutions to arrange some plan of exchange of registrants' credentials with other institutions of the State or those of other States. There is no national organization of placement officers; and no general scheme of interchange, however desirable it may be, has been effected.

Institutional placement bureaus charge no commission; so they are not tempted to try to fill a large number of positions for commercial reasons. Their success lies not in placing many teachers—for the last two years the number they placed was limited only by the number of registrants—but in so placing the trained minds with which they deal that the largest amount of effective service will be rendered by satisfied workers. They recognize that to learn the needs of positions and to fill those positions with the persons best fitted for them is a high grade of professional service. In order that the bureau may be free to carry out its work, some schools require that no recommendations shall be made by any member of the faculty except such as are made through the appointment committee. Others require that registrants send out a very limited number of applications and either inform the bureau of any sent or gain its consent before sending. Most placement bureaus are studying carefully the needs of the territory they attempt to supply. A western normal that graduates students on the first of nearly every month has had an appointment bureau in operation for nearly 20 years. By experience and careful study the bureau has grown to know the needs of every section of its territory. There are few unsatisfactory placements by that school.

FOLLOW-UP WORK.

A number of institutions, after having made a placement, do definite follow-up work. Others recognize the great value of such work and would do it if the means were available. One institution undertakes to keep in touch with its graduates during their first three years of service. Others attempt to keep files of the higher grades of positions and to assist in promoting their successful alumnae to such places. A western agricultural college sends out a worker to visit and help all of its people who are doing their first year of teaching. Another middle west institution helps its graduates to get located in teaching positions, then secures yearly reports from supervising officials on the quality of the work done, and if possible attempts through visitation to become acquainted with the character of the institution in which the work is being done. Whenever an adverse report on the professional reputation or efficiency of a graduate is sent in, a frendly visit is made to ascertain the situation, the cause, and the remedy. Sometimes the college does not agree with the adverse report of the supervising official.

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BUREAUS IN STATE OFFICES.

Bureaus of teacher placement have been organized in connection with the State offices of education in 16 of the States. Of these, 10 are authorized by legislative act, 5 on the authority of the State superintendent of public instruction, and 1 by the State board of regents. In 15 other States the work is handled at the office of the State superintendent in an informal way and as a matter of personal accommodation. In 17 States nothing is attempted along this line. Legislation for the work increased somewhat after the United States entered the World War. The work in Massachusetts was authorized in 1911; in Minnesota in 1913; in New Hampshire in 1915; in Maine, South Dakota, and Wyoming in 1917; in South Carolina in 1918; and in Iowa, Oklahoma, and Alabama in 1919.

The Massachusetts State teachers' registration bureau became operative in 1912. It acts as a State clearing house for teachers. Minnesota, Iowa, South Carolina, and Alabama are also working toward effective State clearance in their organizations. Minnesota reports the largest number of placements, 773 teachers having been placed in 1919.

The great hindrance to the development of the work in the State offices is reported as the lack of funds. Registration fees are authorized in seven States, but with the exception of Minnesota, where it is $3 a year, the fees are too low to be of material aid. In nearly every case the legislative act carries little or no appropriation, and the work is added to that of the regular office staff.

NATIONAL PLACEMENT BUREAUS.

Nationally both the Department of Labor and the Bureau of Education have undertaken to do teacher-placement work. In September of 1918 the teacher shortage was called to the attention of President Wilson, and he allotted to the bureau from the fund for national security and defense $25,000 to be used for establishing and maintaining a School Board Service Division to assist school officers throughout the country in obtaining teachers. The committee on education and special training of the War Department had already asked for assistance in getting qualified instructors for the Students' Army Training Corps units.

SCHOOL-BOARD SERVICE.

Early in October the commissioner announced the establishment of the division for the purpose of assisting officers of education in finding teachers for colleges, normal schools, and technical schools, superintendents and principals of schools, and teachers and supervisors of special subjects in secondary and elementary schools—such

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teachers as are usually sought and obtained from the country at large rather than from the communities in which the schools are located. He asked that educational institutions send in lists of former graduates, those about to graduate, former faculty members, and the names of any persons who were capable of teaching and who might be induced to take up the work. The aim was to use to the best advantage the available teaching corps and to call into the profession as a patriotic duty all who could be of use. Wide newspaper publicity was given to a campaign to keep the schools open and to the work of the division as a help in attaining that end.

Registrations and requests for nominations began promptly. By February 1, 1919, the names of 3,500 teachers had been received. The division had made nominations to 1,100 positions in high schools, colleges, and universities, and to 400 or more grade and rural schools. In addition to maintaining a list of workers immediately available, the bureau undertook a directory of men and women who were satisfactorily placed and did not wish to have their names used as candidates for other places.

The abrupt termination of hostilities in November, and the consequent beginning of demobilization, made it seem possible that many of the returning soldiers could be secured for teaching places. The especially well-selected and well-trained group of young psychologists, some 300 in number, who were released in December and January, were registered with the bureau and the attention of superintendents in larger cities was called to the unusual opportunity to establish departments of psychology and research. The bureau attempted to arrange with The Adjutant General's Office a plan for placing discharged soldiers who were fitted to teach. The attempt was not successful.

The School Board Service Division continued its work until July 1, 1919. On that date the fund for national security and defense ceased to exist as such, and Congress has not appropriated any funds for teacher register work. The division was then closed. During this period of its existence School Board Service had carried on a strong publicity campaign to mobilize the teaching force of the country, had thoroughly canvassed the schools to determine their needs, had secured the names of 13,000 teachers ready for active duty and of 6,000 for a directory, and had made 15,000 or more nominations for positions. On October of 1919 Congress gave a deficiency appropriation of $5,000 to continue the work. After the division had been dormant for five months it was reopened with a smaller force of workers.

Of course the lists of names were more or less out of date, so it was necessary to announce the reopening of the division and to send

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to each of the 13,000 active registrants a letter asking for information as to his desire or ability to teach. To this letter the division received 5,000 replies. Part of the falling off in the number of registrants was probably due to lack of confidence caused by the first closing of the division and to less extended publicity, but much of it was unquestionably due to an increasing shortage of teachers.

As soon as a fair return of registrations was received the division announced to colleges, universities, and high schools that it was open and ready for service. The colleges and universities took but little advantage of the offer. The high schools made requests for teachers of all kinds at an average of at least 175 a day. The lowest number asked for in any one day was 25, the highest 436. Teachers of domestic science, manual training, and agriculture were in special demand. The names of all the active registrants of the division were sent out numbers of times in three or four weeks. Congress again refused appropriations, and on July 1, 1920, the work of the division ceased for a second time.

The rather incomplete sketch of teacher placement by public organizations makes it clear that the work is a necessary and very important service. The policies that must be followed in order to bring about the best results have been fairly well established by experience. The bureaus engaged in it need to be more closely coordinated and methods of exchange of credentials, evalution of certificates, and standardization of credits need to be provided.

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DEPARTMENT OF THE INTERIOR
U. S. BUREAU OF EDUCATION

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BUSINESS TRAINING AND COMMERCIAL EDUCATION

By

GLEN LEVIN SWIGGETT
SPECIALIST IN COMMERCIAL EDUCATION
BUREAU OF EDUCATION

[Advance Sheets from the Biennial Survey of Education in the United States, 1918–1920]

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BUSINESS TRAINING AND COMMERCIAL EDUCATION.

By GLEN LEVIN SWIGGETT,
Specialist in Commercial Education, Bureau of Education.

CONTENTS.—New developments—Training and education—Recent surveys—Training in retail selling—Commercial teacher training—Foreign service training—Foreign trade training survey—Commercial engineering—Related activities of Federal bureaus.

INTRODUCTION.

The period of participation of the United States in the recent war witnessed a revival of interest in training for business with a consequent experimentation in all types and grades of schools, as well as through nonschool agencies, governmental and otherwise. A survey of this field for the two years ending June 30, 1920, reveals an interest even greater than that of the preceding two years for traditional schools, but indicates a subsidence of interest and discontinuance of experimental effort on the part of some nonschool agencies, particularly branches of the Federal Government.

Three recent foundations present new developments. They have their inception in the definite belief that training will lead to a larger and more practical application of pertinent principles of the economics of business to the specific problems of one or more of the major factors in industry and commerce. These new foundations are: Trade-union colleges; the Industrial University of the Goodyear Tire & Rubber Co., with teaching staff of 117, a student enrollment of 6,200, and a course of study to include economics, corporation organization, industrial management, finance, bookkeeping and accountancy, costs and statistics, commercial geography, and economic history; and the announcement[1] that plans are under way for the establishment by the National Association of Corporation Schools of an industrial and commercial university for the purpose of making investigations and conducting courses to train efficient executives in all departments of the field of personnel relations in industrial and commercial life.

TRAINING AND EDUCATION.

In any consideration of accomplishment and tendencies in the development of this phase of educational preparation it is always well to keep in mind a real difference between training and education, particularly since no other type of educational preparation has given such confusion of terms with respect to the content, method, and

[1] Compare Bulletin for Oct. 15, 1919, by the National Association of Corp Schools.

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purpose or object of study. This is due in a large measure to the fact that business training came as a late entrant to high school and college. The period of readjustment in accord with the established academic procedure in respect to admissions and graduations was and is coincident with a period of industrial and commercial expansion, the course of which has not always been under economic control. Sensing the economic gain to ensue through the correlation of training for and actual conduct of business, business educators and business men have endeavored in larger numbers and throughout a larger territory than ever before to obtain a program of coordinated educational opportunity and business need which would give to business a natural movement of supply from the schools of boys and girls, men and women, efficiently trained for the enlarging definite and specific tasks of business.

The motive of this approach has been cordial but not always timely, and has sometimes been ill-advised. Always the latter when the fundamental purpose of the public schools in a democracy has not been kept clearly a guiding principle in the establishment of special training courses. The division of labor in the field of distribution has not always been apparent as in that of production. The unit cost in marketing involves factors yet intangible. It is therefore difficult, involving uncertainty and change, to functionalize business training courses the major, nay the sole, purpose of which is to train for specific tasks of business. Experimentation, therefore, in this special field of educational endeavor is more evident in vocational business training than in the broader and more general aspects of liberal commercial education.

And this is rightly so. We live in an economic era. Inter and intra national affairs are largely determined by economic advantages, and these are in a large degree conditioned by the magnitude of scale and measure of efficiency in management of industry and commerce. The need of constantly improved methods for increased production and salvage, in transportation, marketing, and financing, no matter in what field of development, has never been more apparent. Nor has there ever been a greater need for trained labor, whether of head or hand. The consciousness of this need has given to business education a position of commanding interest in business as well as in education. Commercial organizations, National, State, and local, place increasing emphasis on training and education for business and commerce. Programs in training for special types of business service similar in purpose and procedure to that of the American Institute of Banking have been developed and extended by other organized business service groups, for example, the National Association of Credit Men has planned a course of study to be offered by cooperative arrangement in the larger urban universities.

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The schools of commerce and business administration of the larger universities cooperate largely in this novel development in the field of business education. In institutions of this type the work has passed successfully the period of experimentation and suggests a direction which may ultimately be taken by vocational training of secondary years. Cooperation of school agencies is secured, but interested business of special service assumes a large measure of initiative, direction, and financial responsibility. The assured success, however, of instruction of this character, if a permanent gain to business is to result, is conditioned by the anterior education of the student.

It is at this point that one must hold fast to the fundamental difference between training for business and education for business or commerce in the organization and administration of commercial education. Education for commerce is commercial education. It deals with principles and laws that govern commerce; possesses a body of information that may rightly be called the culture of business; and gives the technique necessary in management of business, simple or complex. It requires years in preparation, whether for domestic or foreign trade; would defer specialization; and implies a reasonable measure of standardization and sequence of courses in educational practice. On the other hand, one can begin vocational business training in the schools whenever the maturity of the student permits training for the job which is at hand. In this respect the commercial trades are not unlike the industrial trades. The only difference is in how much of this kind of training shall the schools carry and how much shall be left to business itself.

This question naturally arises whenever the basic difference between training and education is understood. The insistence upon an answer to the question is becoming increasingly apparent in discussions on commercial education.

Four recent publications in particular call for more than passing mention in this connection, namely, "Business Education in Secondary Schools,"[1] a report of the commission on the reorganization of secondary education appointed by the National Education Association; "A Survey of Commercial Education in the Public High Schools of the United States,"[2] by Leverett S. Lyon; "Commercial Education, Organization, and Administration,"[3] issued by the Federal Board for Vocational Education; and "The Relation of the Collegiate School of Business to the Secondary School System,"[4] a discussion by Dean L. C. Marshall, of the University of Chicago, and

[1] Bull., 1919, No. 55, Dept. of Interior, Bur. of Educ.
[2] Dept. of Educ., Univ. of Chicago, 1919.
[3] Bull. No. 34, Commercial Series No. 3, Fed. Bd. for Voca. Educ.
[4] Jour. of Polit. Economy, Vol. XXVIII, No. 2, Feb., 1920.

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others. These recent contributions to the subject of commercial education indicate division in thought that can not be ignored. In respect to the position we take, we define the purpose of commercial education and can perhaps delimit the sphere and scope of business training. If so, we secure common thinking and common action with seemingly disparate groups.

The aim of business training is definite and specific. That of commercial education is of wide range and may even at first glance seem purposeless in its effort to educate broadly for the understanding of social phenomena and economic management. The element of time is a determining factor in the difference of aim and must condition the when, what, and where of business training and commercial education. For example, admitting the principle underlying the report made by the committee in Bulletin No. 55 above mentioned, two members of the review committee objected to the limited amount of time given to social study and community civics, in which objection the report of Dean Marshall would strongly concur. The latter report ably defends the thesis that business education must give competence in social relationships as well as technical competence and develops successively from the seventh grade through social science studies opportunity for the enlarging grasp on the part of the student of the individual's economic and social functioning in organized economic society. The Association of Collegiate Schools of Business has appointed a commission to correlate, after a suitable survey, secondary and college business education somewhat along the lines of Dean Marshall's report.

It would seem that the program of the association would lessen greatly the demand for commercial occupational surveys, although opportunity will be fully allowed for commercial electives to meet known vocational needs. The demand for surveys of this character, however, continues strong, although within the past two years no report of the significance of the Cleveland survey has been published.

RECENT SURVEYS.

The belief persists that known business needs permit and lead to localization and specialization in type, method, and content of business education. Surveys, both general and particular, are being carried on with local cooperation by the two Federal agencies. The survey of outstanding importance of the Federal Board for Vocational Education is the commercial occupational survey of some 20 type cities. The survey[5] was carried on through the State directors of vocational education in 16 States having a continuation school

[5] Survey of junior commercial occupations. Bull. No. 54 Com. Educ. Series No. 4 of Fed. Bd. for Voca. Educ.

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law. There are 22 such States. Based on job analyses of the junior commercial trades, direct training through 26 elementary business-training courses is suggested as possible. The division of commercial education of the Bureau of Education has planned with regional co-operation to ascertain within each region by investigation and survey the natural economic advantages for industrial and commercial development; with the resulting major types of productive and distributive business for which pertinent courses of study adequate to meet the progressive needs of these major types of business shall be constructed and introduced into schools and colleges.

Special mention should be given of the survey of New Brunswick, N. J., in the spring of 1919. The bureau's specialist in commercial education assisted with this survey. Secondary education in New Brunswick is on the three-three plan. Therefore the purposes and opportunities of the coordinating junior and senior high schools had to be considered in relation to independent as well as complementary functions of local business in recommending a suitable course of study. The survey was conducted in the usual manner. From the results secured, business training study groups, prematurely differentiated, seemed ill advised. The immediate problem, therefore, was to formulate for these two high schools an articulated course of study in preparation for general business with such emphasis upon the essentials and background of business in the junior high school as will both satisfy local business needs and encourage and equip all students who may wish to continue their studies in the higher schools.

The proposed course of study follows, with comment:

JUNIOR HIGH SCHOOL.

SEVENTH AND EIGHTH GRADES (FOR ALL STUDENTS).

First half.		*Second half.*	
Subjects.	Periods per week.	Subjects.	Periods per week.
1. English	5	1 and 2. English and arithmetic	5
2. Arithmetic	5	2. Commercial products and science	5
3. History and geography (U. S.)	8	3. History and geography (U. S.)	8
4. Foreign language	5	4. Foreign language	5
5. Physical training (3) and music (1)	4	5. Physical training (3) and music (1)	4
6. Industrial and household arts (including drawing)	4	6. Industrial and household arts (including drawing	4
7. Citizenship	2	7. Citizenship	2

COMMENT.—In the eighth grade the course in history and geography will treat of modern Europe. It is urged that citizenship be given under proper direction and supervision, with regular tests during two assembly periods to the entire junior high school. The subject should be likewise presented for the same number of hours to all students in the senior high school during the senior assembly. The combination of English and arithmetic in the second half year is especially urged. While this plan may seem at first novel and radical, the many advantages to the subject, the student, and business in general warrant

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at least a careful trial. With the exception of college-entrance students beginning algebra in the ninth grade, it is suggested that this combination of English and arithmetic in the second half of the school year be tried for the seventh, eighth, and ninth grades. Especial attention is called to the suggested treatment of elementary science in connection with commercial products. This plan affords the best possible treatment for the introduction of the industrial applications of science and vitally motivates at the same time the courses in history and geography.

NINTH GRADE.

First Half.

Subjects.	Periods per week.
1. English	5
2. Arithmetic	5
3. History and Geography (Latin America)	8
4. Modern Language	5
5. Physical Training (3) Music (1) Drawing (2)	6
6. Citizenship	2
7. Typewriting	5

Second Half.

Subjects.	Periods per week.
1 and 2. English and Arithmetic	5
2. Commercial Products and Science	5
3. History and Geography (Latin America)	8
4. Modern Language	5
5. Physical Training (3) Music (1) Drawing (2)	6
6. Citizenship	2
7. Typewriting	5

COMMENT.—In this grade there is some emphasis on differentiation in the direction of business training. As stated above, college entrance students will, for the present, substitute algebra for arithmetic. Vocational students will substitute industry and household arts for typewriting.

SENIOR HIGH SCHOOL.

TENTH GRADE.

First Half.

Subjects.	Periods per week.
1. Business English and Correspondence	5
2. Elementary Bookkeeping	5
3. Industrial History of the United States	3
4. Modern Language	5
5. Typewriting and Office Practice	5
6. Physical Training	3
7. Citizenship	2

COMMENT.—The above course of study for first half of tenth grade is repeated without change in the second half.

ELEVENTH GRADE.

First Half.

Subjects.	Periods per week.
1. Business English and Correspondence	5
2. Commercial Arithmetic	2
3. History of Commerce	2
4. Science	3
5. Physical Training	3
6. Citizenship	2
Elect two of the following:	
Modern Language	5
Stenography	5
Advanced Bookkeeping	5
Salesmanship	5

The foregoing course of study for first half of eleventh grade is repeated without change in the second half. For the present, salesmanship is not to be offered as an elective in the junior year. As soon, however, as the local situation warrants, this subject is to be considered and offered as a study project like stenography and bookkeeping. In the eleventh and twelfth grades all written work should be submitted in typewritten form.

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TWELFTH GRADE.

First Half.

Subjects.	Periods per week.
1. Business English and Correspondence	3
2. Commercial Arithmetic	2
3. Modern Economic History	3
4. Commercial Law	2
5. Science	3
6. Physical Training	3
7. Citizenship	2

Subjects.	Periods per week.
Elect two of the following:	
Modern Language	5
Economics of Business and Business Organization	5
Stenography	5
Salesmanship	5

COMMENT.—The foregoing course of study for first half of twelfth grade is repeated without change in the second half.

A large number of colleges and universities have established recently separate schools of commerce, business administration, etc. No period has been more marked in this respect than that of the last two years. This is particularly true in the Southern and Central States. It is gratifying, further, to note that in these more recent establishments there is evidence of a desire to build the courses around two fairly well-established university majors, namely, accountancy and business organization and management. The diversity of opinion in respect to the educational value of stenography and typewriting, both for admission and graduation credits, still retards the development of a course in secretarial practice of college grade. Nevertheless, there has been marked development in the latter special career-training course. The smaller colleges with training courses of the better business college type, for men as well as for women, but particularly the latter, begin to react to the principle of direct training in the arrangement and sequence of courses in the commercial departments, as they are usually called, attached with large measure of autonomy to their preparatory schools or included within the college proper. The one and two-year emergency or war-time courses, prepared and sent by the commercial education division of the Bureau of Education for use largely in institutions of this type, have been of great help to the smaller colleges for women.

TRAINING IN RETAIL SELLING.

Another marked tendency in direct training with the development of a pertinent functional group is that of retail selling. Very nearly every type of educational agency has been affected. Impetus has been given to this development by the program and special effort of the Federal Board for Vocational Education and the National Society for Vocational Education.

The need for instruction of this character was especially emphasized by Supt. F. V. Thompson, of the Boston city schools, in the

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report on commercial education for the Biennial Survey 1916–1918, of the Bureau of Education. It is also given full recognition by the committee on business education as one of three high-school curricula, namely, general business and bookkeeping, stenography and presecretarial, and retail selling and store service.

The need for teachers of retail selling became quite early apparent in the establishment of this course. Naturally urban universities have responded first to this need. Carnegie Institute of Technology inaugurated in October, 1918, a training course for personnel assistants in stores and teachers of retailing as part of a larger program for the intensive study of human relations in industry and business. Cincinnati and New York Universities have since followed with courses somewhat dissimilar in plan of organization and method of instruction. The three types, however, present features in common which may lead to common procedure in the early future in the extension of this type of training for store service and teaching of the same. Subjects of instruction naturally common to these teacher-training courses are store organization and management, technique of selling, and merchandise information. The significant difference in the three types of training here mentioned is due doubtless to the variety of major purpose that consciously has underlain the planning of these courses, namely, preparation of high-school teachers, directors of sales of department stores and other business, and research sales specialists—a threefold obvious need.

COMMERCIAL TEACHER TRAINING.

The need for teachers in business training and commercial education subjects becomes increasingly more apparent to school officials as the type and scope of instruction to be given in schools and colleges in preparation for business and commerce become more and more fixed. An inquiry in respect to the training of secondary commercial teachers sent by this division of the bureau in March, 1919, to higher institutions, including public and private normals, revealed the fact that scarcely any attention was being given throughout the United States to commercial teacher training. For example, among the larger universities, including State universities with a school of commerce, courses were only reported at the following institutions: Chicago University, University of Illinois, Simmons College, University of Minnesota, University of Nebraska, College of the City of New York, New York University, University of North Dakota, University of Oklahoma, Oregon Agricultural College, University of Oregon, Temple University, Carnegie Institute of Technology, University of Pittsburgh, the University of Utah, and the State Teachers' College of Colorado, Iowa State Teachers' College, New York

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State College for Teachers, and the three Ohio institutions in Ada, Athens, and Miami. The catalogues of similar institutions of this type, however, announce this work as already or about to be established: University of Arkansas, the University of Southern California, University of California, including the southern branch at Los Angeles; Florida State College for Women, Georgia School of Technology, University of Idaho, University of Indiana, University of Iowa, Iowa State College of Agriculture and Mechanic Arts, University of Kansas, University of Louisville, Boston University, Harvard University, University of Montana, University of Nevada, Columbia University, Syracuse University, University of North Carolina, North Dakota Agricultural College, University of Cincinnati, University of Pennsylvania, University of South Carolina, University of Washington, and the University of Wisconsin.

Public normal schools to report commercial training in response to the inquiry of March, 1919, were those of Tempe, Ariz.; Willimantic, Conn.; Carbondale and Normal, Ill.; Emporia and Pittsburg, Kans.; Richmond, Ky.; Salem, Mass.; Kalamazoo and Ypsilanti, Mich.; Cape Girardeau, Warrensburg, and the Harris Teachers College of St. Louis, Mo.; Kearney, Peru, and Wayne, Nebr.; Keene and Plymouth, N. H.; Plattsburg, N. Y.; Valley City, N. Dak.; Cleveland, Ohio; Alva, Okla.; Indiana, Mansfield, and Slippery Rock, Pa.; Cheney, Wash.; Shephardstown, W. Va.; and Whitewater, Wis. A course in commercial teacher training has been planned or introduced at the normal schools located in Mount Pleasant, Mich.; Trenton, N. J.; Canyon, Commerce, Huntsville, and San Marcos, Tex.; and Fredericksburg, Va.

It will thus be seen that it was impossible to receive training for the teaching of secondary school subjects in preparation for business and commerce at the close of the school year, as reported in the following States: Alabama, Arkansas, Delaware, Louisiana, Maine, Maryland, Mississippi, Nevada, New Mexico, Rhode Island, South Carolina, Tennessee, Vermont, and Wyoming.

Commercial teacher training by intensive courses in subject matter, as well as in methods, is being encouraged and will doubtless be rapidly extended. Mention should be made of the recently established summer school instruction at the University of California, University of Virginia, and the Public Normal at Oswego, N. Y.

FOREIGN SERVICE TRAINING.

The two years just elapsed have seen marked development in interest for special training for foreign service, particularly commercial. In addition to the group sessions devoted to this topic at the annual convention of the National Foreign Trade Council, other

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national organizations, notably the American Manufacturers Export Association, have set aside special educational sessions on the programs of their annual meetings. The United States Chamber of Commerce has likewise begun to consider foreign trade at sectional meetings, in which training naturally is emphasized. The opportunity for instruction in foreign trade, from the short lecture course, with or without serious study, to the university major has been widely extended. Several private business schools now offer instruction in foreign trade. The Bureau of Education reported not a single high school in the larger cities giving foreign-trade instruction for the school year ending June, 1917. Since that date several cities have introduced the subject, following Boston's lead. There is yet a great diversity in treatment, qualitative as well as quantitative. In the New York High School of Commerce it is given full treatment as one of the nine career study groups. With increasing need for this kind of instruction manifest among the better private business schools, it is to be expected that a course in training similar to that now given at the Butler School of Commerce in San Francisco will be offered.

The most hopeful outlook for this special kind of training is to be found within the colleges and universities, several of which, notably urban universities, have greatly expanded their course in training for foreign service. This is true not only of higher institutions in large port cities, where it is naturally to be expected, but inland institutions with their newly established schools or departments of commerce or business administration are now offering foreign trade by group treatment. Special mention should be made of the increased opportunity for instruction now offered at the Nation's capital in the supplementary schools of Georgetown University and the American University; and of the marked departure in the establishment in October, 1920, of a branch of Boston University in Habana, Cuba. The courses of the Habana Institution will parallel those given in Boston and lead to the same degree, bachelor of business administration. Of special interest to students who are preparing for a career in foreign commerce is the fact that students may begin their course of training in one branch and complete it in the other.

FOREIGN TRADE TRAINING SURVEY.

This division of the bureau cooperated with the Association of Urban Universities and the Committee of Fifteen on Educational Preparation for Foreign Service in making a field survey of the character and the extent of foreign trade in a few major cities in order to determine whether and how schools and colleges can train for foreign trade. The investigation in each city was carried on by a competent group of local educators and business experts.

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In the conduct of the survey there was naturally a wide variety of practice in the selected cities. Difficulties were encountered peculiar to this novel field. The survey inaugurated a new type of cooperative service of Government, business, and the schools, and should serve as a model for subsequent surveys of similar purpose to be carried on by the same or by other agencies.

The survey was twofold in character: To ascertain the character and volume of foreign trade in a particular city and local needs for trained employees in home and foreign field; and to ascertain the educational opportunities in schools of all types and grades for supplying this trained service. On the basis of dependable information furnished by this investigation the local cooperating committees would recommend study courses and give expert counsel to school authorities helpful in enabling the schools progressively to meet local business needs for a foreign trade personnel.

Fifteen cities were included in this major survey. Twelve cities have completed the work to be undertaken, have reported their findings to this bureau, and have carried out in varying degree the measures to be recommended. A brief report upon the survey as a whole will be shortly published. One may anticipate, however, at this time the published report by stating the following conclusions serviceable in constructing foreign trade training programs:

A. *For the Export Manufacturer.* (1) A great majority of business men in all cities prefer that their foreign trade employees have at least secondary school training, and it is significant to note the large number to require college training as a requisite for employment. There has been marked advance in this respect since the investigation made five years ago by the educational committee of the National Foreign Trade Council. (2) Direct exporting is the favored plan in six, and of equal rank in three other cities. This information should be of the greatest help in determining the character and extent of foreign trade training, since it safely predicts a basis of permanency for the foreign trade of this country. (3) The survey indicates the increasing participation of women in foreign trade service, still largely routine in character, however. (4) In the division or classification of service performed the selling service leads, with shipping a close second.

B. *For the Export Merchant and Commission House.* (1) The survey indicates that the demand for this type of service was not decreasing at the time of the survey. (2) Latin America and the Far East are the special trade spheres. (3) Spanish and French are the languages of correspondence. (4) Knowledge of purchasing is an essential. (5) High-school training is considered sufficient for employment.

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C. *Forwarding Agents.* The survey shows a preference for Americans taken from high schools without further training than that given in the actual conduct of the business. It would seem, therefore, that it might be well within the province of the high schools to restrict their vocational foreign trade training to this type of service.

D. *Bank and Credit Institutions.* (1) The survey reports no difficulty in finding employees for home service. (2) The percentage of women employed is large in the reporting cities, 31 per cent in Chicago and 28 per cent in New York. (3) Training in actual business is preferred with the exception of New York, where preference for a cooperative plan is expressed. (4) Continuation training is carried on to a very marked degree in all cities except those on the West Coast.

The published report on this survey will give results by cities. From the foregoing, however, can be made the following summary: For service in sales and management the need for college training based upon previous secondary preparation is increasing; in training for special service, more or less routine in character, the secondary schools have and will continue to have a large part to play as these special services become more and more definite.

In the meantime even greater experimentation in training is to be expected. It is hopeful to note, however, the increasing number of institutions to establish their foreign trade training upon the basis of careful preparation to include the knowledge of markets, technique of marketing, and the ability to use the languages of these markets.

COMMERCIAL ENGINEERING.

There has been gratifying response on the part of higher institutions to the recommendations of the committee conference of June 23–24, 1919, on business training for engineers and engineering training for students of business, organized by this division of the bureau in cooperation with a committee of engineering and commerce education experts appointed by the Commissioner of Education. The report of this conference has been published as Bureau of Education Bulletin, 1919, No. 58.

The resolutions of this conference called attention to the demand for men with combined technical engineering and business training, and recommended that students in commercial courses be given opportunity to take special courses in the basic principles and practices of engineering; that the economic phases of engineering subjects be emphasized for engineering students; and that there be developed a coordinated program in engineering and commerce which will give to the graduate practical training in modern languages, the essentials of engineering, and knowledge of business theory, and skill

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in its practice essential to the management of overseas development projects.

A large number of higher institutions cooperated in this constructive conference program and have since modified in small or large degree their engineering training in order to permit at least one group of their students to work to this special objective and furnish a supply of men for a known need in our industrial-commercial development. The recommendations of the committee have been of service in the establishment or extension of the work at many large institutions. Of these institutions may be mentioned the following for the purpose of further inquiry: University of Alabama; University of California; University of Southern California; Sheffield Scientific School of Yale University; Georgia School of Technology; University of Notre Dame (Indiana); Iowa State College; Tulane University; Johns Hopkins University; Massachusetts Institute of Technology; University of Missouri; Princeton University; College of the City of New York; Columbia University; New York University; North Dakota Agricultural College; University of North Dakota; Oregon Agricultural College; Carnegie Institute of Technology; Swarthmore College; Brown University; University of South Dakota; University of Utah; Norwich University (Vermont); West Virginia University; University of Washington.

The course taken by the University of Cincinnati has been radical. In furtherance of the object of this combined training, this university has recently coordinated the departments of engineering and commerce under the administrative direction of a dean of engineering and commerce. This work was inaugurated at the University of Cincinnati September 22, 1919. The announcement of this coordinated college reads:

> This course is planned to meet a demand on the part of the larger business organizations for men thoroughly trained not only in the commercial side of business enterprises but in the productive side as well. The relationships between production, marketing, accounting, and finance are so close that a knowledge of all of them is essential to work in the higher commercial positions related to large business undertakings. The cooperative course includes theory and practice in all of these phases of business.

RELATED ACTIVITIES OF FEDERAL BUREAUS.

In recent years several of the Federal departments have, through pertinent bureaus, carried on investigations and published bulletins helpful in suggesting ways and means for securing better methods in production and distribution. In some cases these studies and publications are intended for direct training of the personnel of the departments or of men and women engaged in that phase of business which is the special field of inquiry of a particular department. It

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would seem, therefore, fitting in this report to refer, in conclusion, to the following:

Department of Agriculture—Bureau of Markets.—A series of bulletins on business practice and account keeping for cooperative stores, country groceries, cooperative elevators, live stock shipping associations, grain elevators, fruit shipping associations, and country warehouses.

Office of Farm Management and Farm Economics.—This bureau, recently organized, considers the economic aspects of agriculture to include cost of production and prospective returns, farm organization, credits and finance, prices and market facilities, etc.; and the economic history and geography of agriculture. On the basis of these investigations, now carried on over large areas, studies of incalculable value will be furnished the larger schools of commerce, particularly in the agricultural States, in the construction of a better coordinated program of instruction in commerce in which will share all factors in production upon which intelligent and efficient distribution or marketing must finally be based.

War Department—War Plans Division.—The secretary of the advisory board reports a rapidly growing business training program and the preparation of several outline courses which are now being printed.

Department of Labor.—Publications of the Training Service, a war activity which dealt with the subject of commercial training in its various aspects, were discontinued June 30, 1919, and there have been no publications since that date.

United States Shipping Board—Recruiting Service.—The training carried on by this service of special interest to commercial education is that which is emphasized concurrently with the sea-training program, namely, a maritime commerce course which is to be established at or near the principal American ports to include accounting, business correspondence, business principles, economics, elements of statistics, markets, elementary transportation, principles of foreign trade, one or more foreign languages, exports and imports, railroad and marine rates, business administration, business law, admiralty law, advertising, ship operation, and other basic subjects. The course now given at the University of Washington may be cited as typical of the program offered by the United States Shipping Board Free School of Navigation and Maritime Commerce in cooperation with schools or departments of business administration or commerce. The plan is to divide the academic year into four quarters. In the beginning year the first three-quarters will include accountancy, business correspondence, ship operation, business statistics, economic resources, typewriting, and an elective. During the

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fourth quarter the student is assigned to sea-training or to business practice under supervision of the cooperative business firm. For the remainder of this four-year period required for graduation, the student will spend alternating quarters in study at the university and in service at sea or in practice in business. The course is of college grade, with the university entrance and graduation standards.

Department of Commerce—Bureau of Foreign and Domestic Commerce.—The officials of this bureau have taken a keen personal interest in the furtherance of commercial education. They have aided in the organization of schools for the study of foreign trade and have done everything within their power to stimulate effective work along this line. Classes have been taught by certain of the bureau's officials and chiefs of the division. The cooperation of the bureau, and in particular of the district office managers and cooperating foreign trade secretaries of chambers of commerce, was of incalculable value to the foreign trade training promotion program recently carried on by the Bureau of Education, of which mention is made elsewhere in this brief report. This bureau has long recognized the need for more thorough instruction in exporting methods, principles, and routine; and in pursuance of this purpose has published during the fiscal year 1919–20 four monographs designed to encourage and facilitate the study of all the factors in American overseas trade. Only brief reference can be made to these four monographs, which were prepared in cooperation with the Federal Board for Vocational Education or the United States Shipping Board. "Training for Foreign Trade," by R. S. MacElwee, F. G. Nichols, and others, Miscellaneous Series No. 97. This bulletin includes general basic courses covering export technique, market studies of major commercial areas, and courses in foreign languages.

"Paper Work and Export Trade," by G. E. Snider and R. S. MacElwee, Miscellaneous Series No. 85. This bulletin deals with the fundamental factors in the handling of orders from abroad and is supplied with a portfolio containing forms for practice work.

"Training for the Steamship Business," by R. S. MacElwee, Miscellaneous Series No. 98. This bulletin presents the plan and scope of instruction and furnishes six study outlines dealing with traffic management, wharf administration, marine insurance, laws of the sea, and steamship operation.

"Selling in Foreign Markets," by G. E. Snider, Miscellaneous Series No. 81. This publication consists of selected readings from published statements of business men and gives an analysis of sales methods.

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DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

BULLETIN, 1921, No. 44

EDUCATION IN FORESTRY

PROCEEDINGS OF THE SECOND NATIONAL CONFERENCE, NEW HAVEN, CONN. DECEMBER 17–18, 1920

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EDUCATION IN FORESTRY.

PROCEEDINGS OF THE SECOND NATIONAL CONFERENCE.

INTRODUCTION.

The Second National Conference on Education in Forestry was held under the auspices of the School of Forestry of Yale University, at New Haven, Conn., on December 17 and 18, 1920. Its purpose was to discuss the question, To what extent and in what ways is it desirable to revise the standardized curriculum of instruction in forestry that for the past 10 years has been more or less closely followed by the leading forest schools of the United States? That curriculum was the outcome of the First National Conference on Education in Forestry, held in December, 1909, when was appointed a committee on standardization of instruction in forestry that published its final report in the Forestry Quarterly for September, 1912 (Vol. X, No. 3). The reasons that led to the conference of 1909 are set forth succinctly by Dean Toumey in his opening address (see p. 4).

The second conference on professional forestry education was called by Dean Toumey, of the Yale School of Forestry, after consultation with other foresters engaged in educational work. Those in attendance represented, personally or by proxy, all the forest schools in the country that offer courses leading to a forestry degree, or that otherwise train men for the practice of forestry as a profession. There were also present a considerable number of other persons interested in the topics under discussion.

At the time of calling the conference, during the summer of 1920, Dean Toumey named a series of committees, and requested them to be ready to report at the conference in December. In the appendix is given a list of these committees and also of those appointed by the conference, with their personnel. The committee reports, followed by discussions, made up the subject matter of the conference.

Through the courtesy of the United States Commissioner of Education the proceedings of the conference are made of permanent record in this bulletin, the conference having very gladly accepted the commissioner's offer to incorporate this material in a publication of the Bureau of Education.

ADDRESS OF WELCOME.

By Dr. Arthur Twining Hadley, President of Yale University.

It is a great pleasure to welcome you at the opening of this conference on education in forestry. Every convention on technical education, and in fact on education of every kind to-day, has an inestimable value, a value different from

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For some time the speaker has recognized the need for a second national conference on forestry education and in the early summer of 1920 he was urged by many foresters engaged in educational work to call such a conference to convene at New Haven, Conn., on December 17 and 18, 1920. In order to facilitate the work of the conference and make it productive of the most good, a number of committees were appointed some months ago to prepare reports on the more important phases of forestry education in this country. We are here to-day to hear these reports and after full discussion to take such action as is deemed desirable.

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REPORT OF THE COMMITTEE ON THE UNDERGRADUATE COURSE LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN FORESTRY.

It is an axiom that no superstructure can long endure unless it rests on a firm foundation. Whatever opinion one may hold as to the length of time needed to train a man for the practice of forestry as a profession, we are all agreed that he should be well grounded in the fundamentals. The purpose of this report is to set forth what in the judgment of this committee constitutes the groundwork of a technical education in forestry, whether or not it is to be followed later by a more specialized study.

This report is based on the assumption that the normal undergraduate course in professional forestry will cover a period of four years. This the committee believes should hold as the absolute minimum. For easy comparison with existing curricula these years may be divided into eight terms of 15 or 16 weeks of actual instruction each, exclusive of vacations and term examination periods. The four-year period will thus include three summers of approximately three months each.

It is further assumed that upon the successful completion of course work aggregating 130 credit hours, more or less, in accordance with the regulations of each forest school, there shall be conferred on the candidate a bachelor's degree. The committee has not considered whether that degree should be styled Bachelor of Science or Bachelor of Science in Forestry, in that this is a matter that for the most part is regulated by the faculty, or other legislation governing individual institutions.

The committee was assigned the duty of outlining an undergraduate course. The question of whether such a course will give a man adequate and full preparation for the practice of the profession is the province of other committees of this conference. On this point the committee, as a body, expresses no opinion, although its members, as individuals, have very definite ideas thereon, ranging from the viewpoint of Prof. Bruce that four years is enough, to the opposite extreme, which would favor six or even seven years of college work as being none too much to permit the prospective forester to get all that he really ought to have. In this report, however, the committee deems its function to be to set forth how a student who desires to fit himself for professional work in forestry, and who has only four years to devote to college training, can use that time to the best advantage.

Before proceeding to the consideration of the curriculum which it presents for discussion, there are a few general points on which the committee desires to go on record.

Taken by and large, the committee is in substantial agreement, except perhaps as regards a foreign language, with the statement of "Requirements for a Degree in Forestry," announced by the committee that in 1912 reported on Standardization of Instruction in Forestry, as set forth, on pages 344 to 347 of the Forestry Quarterly, Vol. X, No. 3, September, 1912 (pp. 4–7 of the separate of that report). But, on the basis of the experience of the past decade, the com-

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mittee believes that the emphasis should be placed to-day somewhat differently from what it was in 1912. One member of the committee says of the 1912 program: "It treated forestry as a science rather than as a profession." The leaning then was toward botany and silviculture; the present trend is more toward utilization, management, and a wider knowledge of economics, although it is recognized that silviculture will always be the backbone of management.

Approaching the subject more in detail, the committee submits its judgment on several specific points, as follows:

1. Entrance requirements. While admitting the desirability, for several reasons, of pushing back into the preparatory schools certain subjects, especially solid geometry, algebra, and trigonometry, and perhaps physics as well, the feeling of the committee is that in general the forest schools had best not set up requirements for admission different from those of other departments of the universities of which they form a part. It is assumed, however, that entrance requirements shall be of high grade and that they shall cover such subjects as, for example, are now administered by the college entrance board. But there is no objection at all to including in the announcement of any school a strong recommendation to prospective forestry students that they come prepared to pass off certain subjects at entrance.

There is some difference of opinion in the committee on this point, but the fact remains that if a student has to take while in college elementary subjects that he might have got equally well in high school, time will be used up that might otherwise have been devoted to courses that can only be given to advantage in college. Most forest schools are trying to give in four years work that could advantageously be expanded into five. The fewer elementary subjects there are included, the more room there is for technical forestry subjects, or for such closely allied topics as economics.

As to language requirements, the majority opinion of the committee seems to be that French or German should be offered for entrance and not form a part of the college course. There is urgent need for a stronger course in English than is given in many colleges. For the forester, training in composition is more important than an acquaintance with English literature, desirable as that unquestionably is. The ability to speak and write vigorous, virile English is a great asset to any man. Courses that give him training in exposition and argument, through the preparation of themes and reports, seem to be what is needed. If it is impracticable to institute such courses, the forest school faculties should demand of their students that the written work in forestry courses conform to certain standards, even if to do so entails some drudgery on the part of the instructor in the correction of papers. Somehow forest-school men must be made to learn to use English with force and precision.

2. Saving time through the regulation of entrance requirements naturally leads to the question of how far certain advanced subjects, like management and administration that in some schools are now taught only to graduate students, should be incorporated, if at all in an undergraduate course. The committee feels that place should be made for them, leaving the fifth year for those who can go on to the master's degree, to be devoted primarily to specialization. But here again the members of the committee differ to some extent.

3. Based on the principle that it is the duty of the forest schools so to train their students that, following a period of apprenticeship after graduation, they will be equipped to handle large problems, including the framing of forest policies, the committee is in favor of introducing in the later years of the undergraduate course such subjects in the field of economics as business

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law, accounting and cost accounting, industrial organization, and the like. Certain of these require as a prerequisite the general course in economics now required in most college curricula, as it certainly should be in all forest schools. While it is true that a knowledge of these subjects can be acquired through reading, the committee feels that enough work in them should be done at college to establish an interest that will result in subsequent study. Foresters have been prone to forget that forestry and economics go hand in glove.

4. The opinion of a majority of the committee appears to be that a more or less fixed curriculum is best for an undergraduate course. But nevertheless it should be so administered that in the junior, and particularly in the senior year, there may be opportunity for specialization, at least through election from a list of specified courses. The difficulty with too early specialization is that the student is liable to make an unwise choice and then, upon discovering his error, to be unable to readjust himself without considerable loss of time, and perhaps of interest as well. One member of the committee, Mr. Bruce, holds, however, that specialization should begin early, even before entrance to college. To this end he advocates the announcement of parallel curricula in general forestry and in utilization, with considerable flexibility in each, when approved by a faculty adviser.

Several forest schools publish, or at least bring to the attention of the forestry students, a list of courses recommended for election. The committee is agreed that the success of such an elective system depends to a considerable extent on how closely the student is directed by a faculty adviser *who really advises*. The experiment of unrestricted election at Harvard, under President Eliot, has led the pendulum to swing back in many colleges, and particularly in the technical schools, to a closer adherence to a fixed curriculum, at least by underclassmen.

5. The committee is unanimous that professional forestry students should be required to engage in forestry work during the summer vacation period, but opinions vary as to how much and just what should be demanded. The opinion of a majority of the committee seems to be in favor of one summer spent with a forestry party or in a position in a forest industry, plus another summer spent, in whole or in part, in a forestry camp under faculty guidance. Formal instruction need not necessarily be a part of such a camp, but the work in the field must be under strict direction. It should amplify the instruction given by lectures, laboratory exercises, and local field trips in the winter terms, in the essential branches of forestry.

If the forestry camp continues throughout the summer, field work in topographic mapping may be included. If the forestry camp is only of a few weeks' duration, attendance at a civil engineering camp may well also be required. Forestry students should be recommended to do additional work in the forest, in other summers, beyond the minimum requirements. Prof. Briscoe, however, holds that forestry students "get more practical work and more real experience in the woods than in a school camp, and that many students need this time for earning money enough to complete their college work during the remainder of the year."

6. The committee unanimously recommends that the forestry students at all forest schools heartily be encouraged to organize and maintain a vigorous forestry club. The activities of such an organization are a useful adjunct to the classroom and laboratory. The club campfire constantly rekindles the torch of professional esprit de corps that the faculty of every forest school is endeavoring to have handed on from class to class. A live forestry club is a potent factor in the success of any forest school.

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RECOMMENDATIONS.

Specifically as to a four-year undergraduate curriculum the committee desires to emphasize:

1. That the first two years should be devoted primarily to fundamental subjects like English, chemistry, botany, geology, mathematics, and mechanical drawing and civil engineering.

2. That the technical forestry courses should come mainly in the junior and senior years.

3. That more courses in the field of economics should be included than is usual to-day in the curricula of most of the forest schools.

4. That while some specialization may be permitted, if indeed not encouraged, in the junior and senior years, deviation from the regular curriculum should be made only with the approval of a member of the faculty, and in any event that the courses should be selected from a recommended list. If a student desires a wider range of election, he should frankly be told that he must extend his period of residence at the university.

5. In most of the land grant colleges military training is required of all men during the freshman and sophomore years. In certain universities, additional work is required as well in physical training and in hygiene, outside of the regular curriculum. The committee has not made provision for such requirements in its recommendations, although, of course, work of this sort demands of the students a varying number of actual hours per week.

The difficulty of attempting through correspondence, and in the very limited time permitted, to work out a really satisfactory curriculum must be apparent to everyone. The committee frankly admits that the curriculum presented is only a suggestion, which should be followed up by careful and extended study. It hopes that this conference will authorize such a project.

It is, of course, not expected that the curriculum proposed by this or any other similar committee will be adopted by all forest schools offering an undergraduate course. Nor is it desirable that all schools should follow a uniform curriculum. Some schools can emphasize certain subjects better than can others. Perhaps the best results will follow if each school develops those features for which, owing to location or other factors, it is peculiarly adapted. Prof. Bruce accepts the curriculum proposed by this committee as a "general forestry" program, but he feels "that a man graduating therefrom is not to be considered as being adequately trained for forestry work on the utilization side." He thinks "we need a parallel course in forest utilization or forest engineering, based more on physics, mathematics, and mechanics, and less on the biological sciences." Prof. Bruce considers the recommendation "of such a curriculum to be within the scope of this committee, i. e., an undergraduate course leading to the degree B. S. (in forestry)." As indicating a different point of view Prof. Briscoe objects that some of the suggested courses in economics should give place to a larger number of hours in dendrology.

The important point to emphasize at this time is that it is very advisable that certain standard requirements for graduation be indorsed by all the representative forest schools of this country and Canada. If the leading schools can, after discussion, come to substantial agreement on fundamentals, this conference will have served its purpose, as did that of 1912.

SUGGESTED CURRICULUM.

The committee submits as follows a four-year undergraduate curriculum in general forestry that meets with the approval of its several members.

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The curriculum recommended by the committee is in three parts: (1) The subjects to which at least four members of the committee have agreed. These are set forth in schedule form. (2) Supplementary subjects which some members of the committee feel should be included somewhere in the forestry course, if not indeed in stated years. These are listed as recommended electives. (3) A longer list of subjects from which, depending on the desires of the individual student, selection could be made, under faculty supervision, in choosing electives. This list is called suggested electives.

Had the committee been able to meet in person and discuss this matter, the first list might have been more extended; also, further subjects might have been mentioned as suitable for election.

The recommended curriculum is as follows:

SUGGESTED CURRICULUM

For a Four-Year Undergraduate Course in Professional Forestry Leading to the Bachelor's Degree.

FRESHMAN YEAR.

First Term.	Credit hours.	*Second Term.*	Credit hours.
English (composition)	3	English (composition)	3
Chemistry	3	Chemistry	3
Botany	3	Botany	3
Geology	3	Mechanical drawing	3
Trigonometry [1]	3	Biology or zoology	3
		Field of forestry	2
	15		17

SOPHOMORE YEAR.

Civil engineering	3	Civil engineering	3
Physics [1]	5	Soils	4
Dendrology	3	Wood technology	3
Plant physiology	4	Organic chemistry	3
Economics (general)	3	Economics (general)	3
		English (composition)	2
	18		18

Summer following sophomore year.

Three months' period of practical experience with a forestry party or in a forest industry. Required.

JUNIOR YEAR.

Forest mensuration	3	Forest engineering	3
Forest regions (timber trees, physiography)	3	Silvics (forest ecology)	3
Forest entomology	3	Forest pathology	3
Business law	2	Fire protection	2
Accounting	3	Timber treatment (seasoning and preservation)	2
Electives	4	Electives	5
	18		18

Summer following junior year.

Forestry camp. Practice in forestry work under faculty supervision, 4–8 weeks. With this may be combined field practice in topographic mapping, or the forestry camp may be preceded by a civil engineering camp of from 4 to 6 weeks' duration.

[1] When not offered and passed at entrance.

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SENIOR YEAR.

Silviculture	4	Seeding and planting	3
Utilisation (logging, etc.)	3	Management (including organization and finance)	4
Forest history and forest policy (National and State)	3	Electives	11
Mapping (data from civil engineer camp)	2		
Electives	6		
	18		18

ELECTIVES.

Recommended.

	Credit hours.		Credit hours.
Solid geometry (if not offered at entrance)	3	Public speaking	2
Meteorology (for those offering trigonometry at entrance)	3	The forest industries:	
Microscopic wood technology (laboratories with a few lectures)	2	Lumber	2
		Pulp and paper	2
		Economics:	
		Cost accounting	3
		Industrial organization	2
		Labor problems	3

Suggested.

	Credit hours.		Credit hours.
Agronomy	3	Industrial hygiene	2
Analytic geometry	3	Lithology	1
Animal husbandry (general principles)	3	Mineralogy	3
Commercial geography	2	Plant pathology (general)	3
Economics (public and corporate finance, budgets, etc.)	3	Psychology	3
Entomology (general)	3	Shopwork (wood)	1
Forest law (Kinney's texts)	2	Shopwork (iron)	1
		Zoology (systematic mammals)	3

Subjects best taught in given regions.

Logging engineering.
Grazing.

The above report is submitted for the consideration of the conference.

R. S. HOSMER, *Chairman.*
J. M. BRISCOE.
DONALD BRUCE.
A. K. CHITTENDEN.
R. R. FENSKA.
J. S. HOLMES.
Committee on Undergraduate Course.

DISCUSSION.

Following the Report of the Committee on a Four-Year Undergraduate Course.

In answer to a question from Prof. Belyea, of Syracuse, as to the reason of the incorporation of inorganic chemistry in the sophomore year, Prof. Hosmer stated that this was a required subject in most colleges, and, further, that it was a prerequisite for organic chemistry. The chairman called for a show of hands as to whether organic chemistry should be included in a four-year undergraduate course in forestry; 17 ayes, 10 noes.

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On the question of whether the preparation which the average student receives in the preparatory school in elementary mathematics, including solid geometry and trigonometry, and in physics, is sufficient, or whether college courses in these subjects should be required, a show of hands showed 7 in favor of a college requirement; 15 that passing off these subjects by entrance examinations was sufficient.

On a vote on the question of whether forest schools should set up a separate set of conditions governing entrance, or should accept students who had passed the equivalent of the requirements of the college entrance board, there was unanimous expression of opinion that the lattter practice should in general be followed.

The question being raised whether a forest school should demand more credit hours for graduation than is demanded in other schools conferring a bachelor's degree, it seemed to be the opinion of the conference that, because a forest school is essentially on a professional basis, it could demand that courses aggregating a larger number of credit hours should be included in this curriculum. This is following the procedure already in force in a number of the colleges of engineering in this country.

Mr. Herbert A. Smith, of the Forest Service, emphasized the necessity of sufficient work in English so that the students should acquire the ability to express themselves with clearness and accuracy. He felt that too early specialization was undesirable and that the early part of the course should be devoted to laying proper foundations in which the study of English should have no small part.

In closing the discussion on this report, the chairman made it evident that to the committee had been assigned a task of working out on paper what it thought the best course in forestry for a man who could only spend four years in college. The report of the committee should be read in that light, rather than as constituting a fully rounded out curriculum for forestry instruction. The committee was assigned a definite task. The question of what work should be taken by students who desire fully to prepare themselves for the profession falls in the scope of another committee.

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REPORT OF THE COMMITTEE ON THE POSITION THAT FORESTRY COURSES SHOULD TAKE AS CULTURAL AND EDUCATIONAL DISCIPLINE.

Presented to the Conference by Dr. P. P. CLAXTON.

Statistics show that only about 2 per cent of our students of school age carry their education to the point of a college degree. Since most of the education in forestry to-day is confined to technical schools of college grade, agricultural colleges, and the like, it is obvious that, if the great mass of people are to know anything about forestry and its relation to human welfare, some courses of study in the subject must be introduced into the graded schools. Forest geography might be taught in the elementary schools, and if the Forest Service would prepare a leaflet on this subject, most State superintendents could be induced to include the work in their schools. In the schools of higher grade, forests in their relation to human welfare and the industries could be studied, so that in time there would be formed in the minds of the people an appreciation of the problem and a sympathetic interest in it. Education of the public in the field of forestry is the only way in which any constructive legislation can be accomplished.

The needs of the situation in the schools can be met if material already in existence is organized and assembled in such a way that it can be utilized by teachers; this should be supplemented by a series of questions and suggestions, so that teachers will be able to direct the attention of pupils in the right ways. A closer coordination between schools teaching forestry subjects would also be of great assistance.

DISCUSSION.

In the absence of Dr. C. D. Jarvis, of the Bureau of Education, the foregoing informal statement was made by Dr. P. P. Claxton, United States Commissioner of Education. Commenting upon this statement Dr. Claxton said that it is the business of the Commissioner of Education to look forward into the future and see what kinds of education will be needed. The duty of schools is to train the citizens of the future. In time there will be need for a large number of scientifically trained foresters. There is, therefore, a place for education in forestry. From having so many ramifications in the field of economics, it is essential for the well being of any country to have men trained not only for the technical practice of the profession, but also able to handle large questions of policy.

There is also need that the public should have some general information about what forestry is and what it seeks to accomplish. It is not necessary that the great mass of people should know forestry technically, but they should know enough about forestry and its relation to public welfare so that they can understand and have feeling and sympathy for it. It is, therefore, desirable that forestry be introduced as a subject of study in the elementary schools.

Dr. Claxton further suggested in connection with the technical aspect of forestry education, that in his judgment it would be a good thing were the committees of this conference continued, to give further study to this whole subject. A useful precedent has been set in this way by the committees appointed at a conference of highway and transportation engineers held in May,

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1920. These committees have been making analyses of the different things necessary to be done and the several kinds of preparation requisite therefor. Is there not need for similar consideration of the problem of education in forestry?

In answer to a question as to what can be done at once to introduce forestry into the schools, Dr. Claxton suggested that lesson leaflets should be prepared and that a good place to begin was with the study of forest geography. If the Federal Government would get out such a leaflet he thought that he could induce most of the superintendents of State education to require its use.

Mr. S. T. Dana, of the Forest Service, suggested that in this connection it might be desirable to call a conference of superintendents of schools on forestry as a cultural and educational subject, in which might also be included the presidents of universities and the deans of colleges. Dr. Claxton said that he would be glad to consider this if the conference should ask for it.

The discussion closed with the suggestion that the committee might well, in its study of this question, recommend some form of cooperation between the Bureau of Education and the Forest Service that would lead to the preparation of a manual on forestry for use in the public schools.

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REPORT OF THE COMMITTEE ON THE COURSE LEADING TO THE DEGREE OF MASTER OF FORESTRY.

THE FUNCTION OF A FIVE-YEAR COURSE IN FORESTRY.

Modern civilization rests upon the principle of cooperative effort in providing on a large scale and in advance of actual need the materials required for maintaining our standards of living. The three foundation stones are capital, cooperation, and Christian ethics. Forestry as a national policy embodies the highest development of the ideals of this civilization. The function of capital is to make possible the existence of individuals during the period required to organize an industry and produce the goods. Its destruction means starvation and savagery. Forestry requires by far the greatest period of time for production of any material, and is thus most closely dependent upon the ability to await returns, and upon the foresight and self-denial in the present, which this effort calls for. Cooperation means the development of specialists and technicians on the one hand, and on the other the harmonious working of this complicated organization for the common good, as opposed to class warfare. In forestry our progress will be measured to a far greater extent than in any other line by public activity, whether through direct ownership or cooperation with private effort. I need not emphasize the third factor—ethics—which alone protects property rights and makes any form of cooperative effort possible.

The material energies of organized society may be summed up as the organizing and conduct of enterprises which supply the consumer with what he needs when he needs it. The success of this effort is gauged by the abundance and cheapness of the goods supplied and the relative advance in average standards of comfort. This involves a threefold process fundamental to the consideration of forestry education: First, a study of the needs of wood consumers; second, the technique of wood production, harvesting, and utilization; and third, the business factors of adjusting the supply or production to the demand. It is possible to separate practically all forestry subjects into these three groups, except those applied sciences which are synthetic in character and whose function is to teach the principles of harmonizing the three elements into practical directions for operations.

The first group may be termed "economics." This deals with the demand, or the reaction of the forest on man. Its basis is the means of expression, language. Its fundamental sciences are history and economic relations, based on statistics. Its forest sciences are forest history and forest economics, while it finds its practical application in policies crystallized and expressed by laws.

The second group may be termed "technique" and deals with the physical environment altogether. Its basis lies in the sciences of physics and chemistry. Its fundamental sciences are geology, botany, zoology, mechanics. Its forest sciences are forest physiography, and soils, dendrology, and forest pathology, forest ecology or silvics, forest entomology and zoology, and wood technology. Its applied sciences are silviculture, forest engineering, forest utilization or

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lumbering, uses and preservation of woods and wood-using industries, and forest protection in its technical aspects, including applied entomology, pathology, and engineering.

The third group, or business, is the one about which most confusion exists, and which is commonly divided between each of the others, some subjects being thrown with economics or demand, others with technique or supply. What constitutes the distinguishing character of this group? The function of a business being to supply demand, it is not limited to the technique of production. The business factors, distinct from these technical methods, deal with the three factors of quantities, location, and order or sequence—that is, the time factor. The basis of this group is mathematics and mechanical drawing. But when we come to the sciences, two sections appear, the one bearing upon economics, the others upon technique or the physical world. The fundamental science in this group belonging to the economic wing is accounting. That belonging to the physical wing is surveying. The one deals with man, the other altogether with the earth.

With surveying we encounter the classification termed engineering. This subject is commonly and correctly classed, under the term civil engineering, with dynamic engineering, for which it paves the way. But surveying and mapping, though forming this connecting link, belong absolutely in the business group, since they effect no dynamic change in the physical environment, but merely locate and measure areas, one of the three primary functions of business.

In the forest sciences the same two wings are in evidence. On the economics side is forest finance, which deals mathematically, through accounting methods, with the purely economic factors of forestry; hence is frequently confused with economics, with which it is the connecting link. On the physical side is forest mensuration, which deals mathematically with the living forces of nature, which it attempts to measure and interpret, thus forming the connecting link with ecology and silviculture. The greatest error in teaching either of these subjects is in viewing them from their purely mathematical aspect and striving to attain mathematical precision in results, when neither human nature nor plant life conforms to mathematical laws. Forest surveying and mensuration are combined under the term forest survey.

The applied science in this group is forest management, which includes organization and regulation of forests. This is a synthetic subject resting directly upon the three groups, based upon forest policy on the one hand and silviculture on the other, but based equally on the mathematical or business factors of finance and forest survey. It belongs in the business group because it is distinguished from each of the other groups by dealing, characteristically, with the purely business factors of quantity, location, and time, and with the organization and business or office methods by which to insure order and sequence of operations. Forest protection is a phase of forest management. Fire protection depends as much on economics, or public education and laws, and on business, or an efficient personnel well organized, as upon methods of fire prevention and fighting. This synthesis makes the subject difficult to classify. Lumbering when it treats of the lumber industry has the same threefold basis and can not be segregated as an engineering or technical subject, though the study of logging methods belongs there.

By temperament and training men tend to class themselves in one of three groups coordinated with this threefold division of forestry. To the economic group belong some of the great pioneers of forestry like Dr. J. T. Rothrock, of Pennsylvania, and many men prominent in the forestry movement whose work

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has consisted in establishing the foundations of forestry in public policy, men not necessarily possessed of a technical forestry training. To the technical group belong the research specialists who are laying the foundations of forestry in the woods. These men as specialists are indispensable, but can we depend upon them alone to establish the practice of forestry? Until the advent of the trained forester, forest agitation got nowhere except as a land policy, which is pure economics. On the other hand, the purely technical side of a forester's training tends to make him contemptuous of the economic side, and to regard popular education as hot air because it does not teach him anything new, and speech making as an ordeal to be shunned. These ultratechnical foresters remind one of the text, "and like a lamb, dumb before his shearers, so opened he not his mouth." They are absolutely dependent for their livelihood as foresters upon the efforts of the economic group, or upon conditions created by these efforts, or else are forced to seek other employment; yet because of the defective specialization in their education these foresters are unable and unwilling in many cases to support this group. Of the two, the economist is bound to have the broader outlook, but he is often impractical. The fundamental defect of a too narrow specialist is intolerance and lack of comprehension of either one or both of the three phases or aspects of enterprise, which leads him to belittle instead of encouraging those engaged in these other rôles, thus operating not to build up the enterprise but to unscrew the bolts which hold it together.

Specialization without vision is not the result of education but of the lack of it. The laborer is a technician, usually excelling in some line, even if it is hod carrying, and with all the benighted insolence of superiority which this excellence gives when not accompanied by a comprehension of the functions of those who are not technicians. The utter disregard of practical affairs shown by the dreamer of utopian theories or narrow economist, when joined with this technical bigotry, is capable of consuming the world. The mathematical or business specialist, typified by the clerk, has no soul above figures. As the old Yale song has it, "now, which of these three persons would you most prefer to be?" The answer is, "The man behind," which, being interpreted, means the leader or organizer, the one who welds together these three elements which were never intended to be discordant or warring; the practical man who possesses not one but all three traits harmoniously developed; who is a thorough technician, understanding the art of successful forestry; who is a sound economist, understanding human nature and the relations of the industry to demand; but who above all is a practical business man, an administrator, who can successfully direct large undertakings and produce, in fact, the perfect cooperation required of forestry as of any other business.

Such men are possessed of the qualities of leadership, and they will become leaders as certainly as oil rises to the surface of water. It is not an accident that a very careful survey some three years ago of all the graduates of the Yale school of forestry showed that over 70 per cent had, in their career subsequent to graduation, demonstrated this ability for leadership.

But what is the rôle of a forest education in producing this type of person? Is he born that way? Can you make leaders by mere school training? There is not one of these three elements that is not better learned outside of college than in it. Economics means the study of human nature, not from books but at first hand, in the woods and factory, in public life. Technique means doing things, and the best way to learn how is to do them or be very close to them. Hence the scorn of the sophisticated laborer for the greenhorn with the education. And where else can a man learn the rules of business than in the

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game itself? Haven't we a host of hard-headed, self-made men to emphasize this truth? Yes, we can all learn one, perhaps two, of these faculties in the school of experience, but it takes three legs to hold up a stool. One man in 100 may attain the power of coordination by his own efforts in the practical school of experience. Thinkers are not confined to the college bred. But more often such men have failed to attain the symmetry required of leaders. When they are given these responsibilities, what happens? They throw a monkey wrench into the machinery either by their failure to appreciate the vital relation of research to the health of the enterprise, or by lack of vision in dealing with personnel, or else they can not swing the administrative problems confronting them. The United States Forest Service has developed a few striking instances of this one-sided inefficiency. Its effects upon an organization are always serious and blighting. By contrast, the remarkable success of the Forest Service, far exceeding that of any administrative branch of the Government in the same period of time, is due directly to the predominance of the well-balanced type of leader, who can build constructively and inspire his subordinates.

In general this effect springs directly from the cause of the general training in forestry received by so many of these men employed by the Forest Service. Well-rounded college training is not a substitute for practical experience, but it is almost certain to give to the student the maximum chance of coordinating the three phases of his education and thus making out of him a leader as well as a specialist. Just as the origin of man from the lower animals came through coordinated development of all the senses leading to the power of thought, so narrow technical specialization must be accompanied by symmetrical development of practical business sense and full human sympathy, if the human race, or the profession of forestry, is to progress.

Does the four-year course in forestry supply this balanced training, or can it do so? This is not a question of technical training. It is not disputed either that technicians in logging, wood technology, silviculture, or other special lines can be given adequate preparation in four years, or that we need a much larger number of men in the ranks of forestry than in command. The question is, rather, What will the fifth year do for the forester who takes it?

F. H. Newell says:

> The human viewpoint is the most important part of education. Logic and reason are not the controlling factors. Emotions, sentiment, and ideals are more powerful.

In the report of President Hadley, of Yale University, for 1920, is the statement:

> Especially is it necessary that men trained along lines of *applied science* should have a training not too narrow in extent or too highly specialized in character.

R. D. Forbes, in an article in the Journal of Forestry in April, 1920, on education says:

> What forestry needs is not specialization, but generalization. Forestry more perhaps than most professions needs men of broad training rather than specialists. In the present state of development of forestry in America we need administrators (business men) and propagandists.

Prof. R. C. Bryant says:

> It is one of the weak points in our profession that we have not developed forestry-economists who can speak authoritatively on the many vital problems affecting forests and forestry. We have neglected the broader economic phases of the subject.

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Prof. S. N. Spring gives as his contribution to this report:

A course covering four years and comprising the fundamental sciences, engineering and forestry courses with a minimum of hours in English and economics, forms too narrow a training for the development of a professional forester. There is need of more economics, English, history, business courses, law, and the like. Youth and undergraduate activities, desirable as they both are, prevent as searching work as is found possible in a fifth year of graduate work, which, properly correlated with the former, should produce men who will raise the standards of forest practice and not be mere practicers of forestry. There must be schools that can give adequate training to maintain the highest standards and to make sure of the best development in forestry in the United States. We must not have in mind the training of foresters solely under present day needs but give the breadth of training that will meet future conditions.

P. T. Coolidge writes:

We can not derive the best benefits from our wild lands as State or Federal administrators or as private foresters except from a point of view which includes a much wider knowledge than that comprised under the teaching of forestry as an art.

He cites the need for economics, history, English, and a modern language—in his case, French.

Our education in forestry during the last 20 years has proven weakest in the approaches to mechanical engineering. * * * Whatever essentials of engineering can be included in a forestry course will prove of greatest value. * * * A subject that for many years had received insufficient attention is accounting. * * * The instruction at Harvard, combining lumbering and business administration, has enabled graduates to do very distinctive work. The silvicultural twist in our education has unduly emphasized consideration of the trees to the detriment of consideration of the forest.

Dr. Roth says: "I believe in a five-year course for the real student who aims at work that is either big or deep," and the Michigan five-year course is planned to enable the student to introduce languages, economics, and other cultural subjects.

In considering what should constitute a well-balanced five-year course of training for a professional forester, and in comparing the courses now given both in four years and five years a common standard of credits is required. Practice differs somewhat between colleges. The standard which has been adopted in this discussion is, for lecture courses, 1 hour for a term of one-half year, consisting of 16 weeks of classroom work, exclusive of examinations and vacations. For laboratory work practice varies between 2 and 2½ hours as the equivalent of 1 hour of classroom, sometimes varying within the same college and department according to the course. For field work, practice varies from 2½ hours to 3 hours as the equivalent of 1 hour of classroom work. At the University of Minnesota one credit hour is equivalent to one lecture or recitation period requiring 2 hours of preparation, 2 hours of laboratory work requiring 1 hour of preparation, or 3 hours of laboratory work with no preparation, each week for one quarter. Three quarters give 32 weeks of work exclusive of examinations. In the four-year course 210 credit hours are required for graduation, which reduced to the minimum basis by the factor two-thirds gives 140 credit hours, or 35 per term, inclusive of the summer field work at Itasca Park, the omission of which lowers the term average to approximately 32 credits.

At the University of California, 130 units of study are required for a four-year course, which includes 6 units of summer field work, or 124 for the regular terms, an average of 32 per year.

The Yale course has been computed by using 2 hours as the equivalent for laboratory work, and 3 hours for field work. As there are 66 hours of labora-

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tory work, the use of 2½ hours as the equivalent would reduce the total credits by about 6 units, giving approximately 200 units. The variation between colleges as to length of term and equivalents used is apparently not sufficient to require the use of reduction factors to obtain a common standard or weight.

The next factor is the size of the load per term or year. See Table 1.

TABLE 1.—*Grouping of subjects in 4 and 5 year courses.*

By group of subjects.[1]	Four years.				Five years.			
	Michigan.	California.	Pennsylvania.	Proposed.	California.	Cornell.	Yale.	Proposed.
Economics, including language	20	27	45	27	27	[2] 21	45½	45
Business, including surveying	41	37	32	27	46	30	51½	45
Technique, including mechanical engineering	71	66	92	70	91	84	108½	90
Research	.....	2	2	.....	2	6+	1	.....
Electives	.....	3	.....	.....	.....	[3] 10	.....	.....
Seminary, advanced work	.....	.....	.....	.....	.....	[3] 4	3	.....
Total	132	135	171	[4] 124	166	155	209½	180

[1] In all courses except at Yale and 5-year proposed about 9 credits are omitted for military drill, hygiene and physical training.
[2] Supplemented by electives: not listed in published outline of courses.
[3] Or more.
[4] Credits for summer field work not included would add 10 to 15 credits.

Here there is considerable variation between colleges. Yale evidently requires a standard of about 20 hours or units per term, while Pennsylvania State even exceeds this. In each case the course permits of practically no electives; so these represent the maximum requirements and greatest rigidity. The standard set by Cornell, California, and Michigan is 16 to 18 hours per term, or a total of about 130 hours for four years. To this in each instance can be added the summer work or term, whether this be one or two seasons. These add from 10 to 20 hours. The additional year brings the total available units to 200 in case of Yale and 175 at California. Cornell, by crediting one term in individual field work with a reasonable number of hours (15), has a total of 159 credits. Pennsylvania State by crowding the load shows 170 credits for four years. To all but Yale 9 credits are added for military drill, hygiene, and personal health. Yale presumably devotes an equivalent time in extracurriculum activities along similar lines.

The effect of an overload is to deprive the student of time which should be devoted to reading and reference work, thoroughness of preparation, and initiative or original thinking, but which may of course in undergraduate work be wasted. Recreation is required, at least by the undergraduate, and for the postgraduate, research, and independent work require a light fixed schedule. There is serious danger, therefore, in endeavoring to crowd into four years a course which should require five years for its completion, or in overloading a five-year course with too great a specialization in any line, if its purpose be not distinctly to specialize.

Assuming a standard of 180 credits for a five-year course, which is 20 less than given by Yale (26 on basis of two hours laboratory for one hour class), how should such a course be balanced for a general professional training? No course can be proposed which will be acceptable to all institutions, even for the purpose outlined, but a standard will serve to call attention to overweight or deficiencies, as well as to emphasize the advantages of five years of training.

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TABLE 2.—*Credits or units per year, 4 and 5 year courses.*

Years.	Four years.				Five years.				
	Michigan.	California.	Pennsylvania.	Proposed.	California.	Cornell.	Yale.	Proposed.	Unit extras.[1]
Freshman	[2] 31	[2] 29	[2] 37	[2] 33	[2] 29	[2] 36	38	34	30
Sophomore	[1] 32	[1] 32	[1] 40	[1] 36	[1] 30	[1] 30	41	34	32
Junior	32	34	42	36	30	37	41	34	35
Senior	29	34	38	36	34	21	40	34	35
Postgraduate	.....	.....	.....	.....	34	[3] 13+	35½	34	35
Summer field work	8	6	14	10	9	[4] 7	10½	10	13
Total	132	135	171	151	166	[3] 144	206½	180	180
Extras	9	9	9	9	9	9	.....	.....	9

[1] Plus 4 hours of military drill, hygiene, etc.
[2] Plus 5 hours of military drill, hygiene, etc.
[3] Plus 1 term of individual work, about 15 credits, and electives not listed in published outline of courses.
[4] Cornell also requires 3 months of practical experience and 1 month in forestry camp.

TABLE 3.—*Subgroups of subjects, 4 and 5 year courses.*

By group of subjects.	Four years.				Five years.			
	Michigan.	California.	Pennsylvania.	Proposed.	California.	Cornell.	Yale.	Proposed.
Electives	.....	3	.....	.....	.....	[1] 10	.....	.....
Economics:								
Language	6	12	24	8	9	6	24	18
Science and arts	14	15	21	19	18	15	21½	27
Total	20	27	45	27	27	[2] 21	45½	45
Business:								
Mathematics and drawing	8	14	6	6	20	6	17	13
Science and arts	33	23	26	21	26	24	34½	32
Total	41	37	32	27	46	30	51½	45
Total for 2 groups	61	64	77	[3] 54	73	[2] 51	97½	90
Technique:								
Physics and chemistry	12	18	13	14	27	12	22	15
Engineering	9	14	11	9	30	9	7	15
Site	10	7	11	10	7	15	12	10
Plants	32	17	39	26	17	31	45½	35
Animals and insects	4	7	8	6	7	11	15	8
Wood	4	3	10	5	3	6	7	7
Total	71	66	92	70	91	84	108½	90
Research	.....	2	2	.....	2	[1] 6	1	.....
Seminary	.....	.....	.....	.....	.....	4	.....	.....
Advanced work	.....	.....	.....	.....	.....	4	.....	.....
Recapitulation	132	135	171	[3] 124	166	159	206½	180

[1] Or more.
[2] See electives.
[3] Credits for field work not included.

The division proposed is shown in Table 2:

Economics ..... 45, or 25 per cent.
Business ..... 45, or 25 per cent.
Technique ..... 90, or 50 per cent.

The technical subjects are further divided into—

Basic sciences ..... 15–16⅔ per cent.
Engineering and practice ..... 15–16⅔ per cent.
Sciences and scientific practice ..... 60–66⅔ per cent.

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The sciences may be further divided into—

Factor of site	10–16⅔ per cent.
Plants	35–58⅓ per cent.
Woods	7–11⅓ per cent.
Animals	8–13⅓ per cent.

It is in the economic and business group that the greatest deficiencies are ordinarily found. The suggested division of the 45 credits in economics is as follows:

TABLE 4.—*Economics—Subjects arranged by groups, 4 and 5 year courses.*

Group and subjects.	Four years.				Five years.			
	Michigan.	California.	Pennsylvania.	Proposed.	California.	Cornell.	Yale.	Proposed.
Basis:								
English	6	12	12	8	9	6	12	12
Modern language			12				12	6
Sciences:								
History		9					6	6
Economics	3		12	11	12	6	3	9
Economic geography							4	
Forest economics	7	1	2	2	1	6		3
History of forestry	1	1	2	1	1	1	1½	1
Applied sciences:								
Business law				2			3	3
Lumber industry		3	2		3		1	1
Forest policy	3	1	3	2	1	2	3½	4

Of these, English has been the most neglected, so much so that most foresters are greatly handicapped by inability to express themselves, although at that the percentage of efficiency in the use of language is higher than is found in the engineering profession. A modern language should if possible be learned in high school—Spanish for practical use, French or German for research and literature. The need for a better basis in economics, including the history of the twentieth century, is going to increase constantly. One three-hour credit is totally inadequate in economics. In no other line does the forester's education need rounding out so badly. Of the nine credits suggested, three are elementary, permitting the student to take later courses in the principles of organization and management, employment, markets, and other subjects for six additional credits.

Business law has been generally omitted, but deserves a place in the curriculum. The remaining nine credits devoted to forest economics include the general courses usually given to beginners, the history of forestry, and State and National forest policy, with one hour for the economics of the lumber industry.

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TABLE 5.—*Business subjects arranged by groups.*

Groups and subjects.	Four years.				Five years.			
	Michigan.	California.	Pennsylvania.	Proposed.	California.	Cornell.	Yale.	Proposed.
Basis:								
Mathematics	8	12	4	3	15	3	10	10
Mechanical drawing	.....	2	2	3	2	3	3	3
Descriptive geometry	.....	.....	.....	.....	3	.....	4	.....
Sciences (economic):								
Accounting	.....	.....	.....	6	3	.....	3	3
Forest finance (technical)	2	2	2	1	2	2	1	2
Surveying and topographic mapping	16	9	10	8	9	14	11	12
Mensuration	8	10	8	3	10	3	5½	7
Applied sciences:								
Lumber business	3	.....	[1]2	.....	.....	.....	4	2
Management (organization and regulation)	4	2	6	3	2	5	10	6

[1] Alternative, not included in totals.

In the business group a minimum of 10 credits is indicated for mathematics. This covers trigonometry, analytical geometry, and differential and integral calculus. There may be some difference of opinion as to the necessity of mathematics above trigonometry, but the additional subjects are strongly recommended in a five-year course.

An elementary course in accounting is considered indispensable to a well-balanced forestry course and is the most serious omission in courses as at present arranged. A second course, making six hours, is advisable as a substitute, if necessary for a course in economics (with which this subject is commonly classed). Twelve hours for surveying is intended to thoroughly cover both plane and topographic surveying. This is adequate. Mensuration is best taught by combining lecture and field work in about equal credit weight, i. e., one hour class work to three hours in the field. If this is not possible, sufficient class work should precede the field work to clarify the subject. Seven credits is considered a minimum for effective instruction.

The eight credits allotted in the proposed course to applied subjects are less than are now given at Yale both in lumbering and management. Owing to the synthetic character of both subjects, an analysis of the time allotted by each university which should fall under economics or technique could not be made with certainty. A summary of all this group as proposed shows the following:

Subjects.	Four years.				Five years.			
	Michigan.	California.	Pennsylvania.	Proposed.	California.	Cornell.	Yale.	Proposed.
Lumber industry	6	11	9	3	10	4	10	9
Policy and management	7	5	9	5	3	7	13½	13

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TABLE 6.—*Technical subjects, arranged by groups.*

Groups and subjects.	Four years.				Five years.			
	Michigan.	California.	Pennsylvania.	Proposed.	California.	Cornell.	Yale.	Proposed.
Basis:								
Physics	4	3	3	5	12	6	12	15
Chemistry	8	10	10	9	10	6	10	
Agricultural chemistry	.....	5	.....	.....	5	.....	.....	.....
Engineering (applied science):								
Forge work	.....	.....	.....	1	.....	1	.....	.....
Elementary mechanics	.....	.....	.....	.....	6	.....	.....	3
Advanced mechanics	.....	.....	.....	.....	10	.....	.....	.....
Forest engineering	3	4	2	3	4	2	1	3
Lumbering	3	7	7	3	7	3	5	6
Forest protection	3	3	2	2	3	3	1	3
Factors of site.								
Sciences:								
Meteorology	.....	.....	.....	.....	.....	3	.....	1
Mineralogy	4	.....	2	.....	.....	3	2	.....
Geology	6	3	3	3	3	4	4	3
Soils	.....	4	3	4	4	5	2	3
Physiography	.....	.....	3	3	.....	.....	4	3
Botany, including silviculture.								
Sciences:								
Elementary botany	4	4	4	6	4	6	4	4
Morphology and anatomy	8	.....	7				8	4
Ecology and physiology	2	.....	2	4	.....	4	8	4
Dendrology	2	6	7	3	6	6	4½	5
Forest pathology	4	.....	3	3	.....	6	3	3
Forest ecology or silvics	4	2½	3½	3	2½	3	6½	4
Applied sciences:								
Silviculture, natural	4	2½	9	4	2½	3	7½	7
Seeding and planting	4	2	4	3	2	3	4	4
Zoology, including insects.								
Sciences:								
Biology	4	4	3½	3	4	3	4	4
Zoology						3	4	
Entomology	.....	3	4½	3	3	3	4	4
Forest entomology	.....					2	3	
Applied science:								
Fish and game	.....	.....	.....	.....	.....	.....	.....	.....
Wood.								
Sciences:								
Wood technology	2	3	4	3	3	3	3	3
Identification, properties, preservation	2	.....	4	2	.....	3	2	2
Applied sciences:								
Wood-using industries	.....	.....	2	.....	.....	.....	2	2

For the technical subjects, including the two lines, engineering exclusive of surveying, and sciences, the allotment of one-half the total is a recognition of the fact that the forester is primarily a technician. The general forestry course as planned can not expect to equip a man as a full-fledged logging engineer unless this is done at the sacrifice of the economic, business, or scientific studies.

It will be observed that the five-year course at California permits a man to complete both the regular four years' work plus the engineering: but this is possible apparently because less foundation is given in some other subjects, as pathology, botany, and silviculture.

It is assumed that either physics or chemistry is a college entrance requirement, and that 15 credits will be sufficient to cover both of these subjects. Elementary mechanics is recommended on the same basis as accounting—as

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necessary to take the raw edge off of the forester's ignorance without necessarily making him a logging engineer. The subject is basic in importance. If this is followed by a course in forest improvements and about 6 credits in lumbering, the forester should be able to get by as a superintendent or even manage small operations directly.

Three hours for forest protection are ample to cover the subject, outside of pathology and entomology.

If surveying is included with engineering, the comparison is as follows, exclusive of lumbering and protection:

Subjects.	Four years.				Five years.			
	Michigan.	California.	Pennsylvania.	Proposed.	California.	Cornell.	Yale.	Proposed.
Surveying	16	6	10	8	9	14	11	12
Mechanical engineering	3	3	2	4	19	1	1	6
Total	19	9	12	12	28	15	12	18

Nor is this general course intended to create specialists fitted for research in silviculture, technology, or forest protection. Such courses will show the same character of variation which California's five-year course shows for the specialized logging engineering training.

The object of the course as planned for the other branch of technique dealing with the forest as a living organism is not therefore to overload the student with botany, silvics, and ecology, but to cover these subjects adequately. They require greater weight than other sciences, since forestry is primarily the art of growing trees.

Under site factors one credit usually omitted can well be devoted to meteorology. Six may be divided between geology and soils. Mineralogy, on the other hand, may easily be overdone; we are not training economic geologists. It is doubtful whether more than 12 credits should be devoted to botany, exclusive of dendrology. The 8 additional credits required by the Yale course tend to develop specialists in ecology, and the time so spent is needed in economics.

Dendrology can utilize from five to six hours, since this course can be made a connecting link with silvics on the one hand and wood utilization and properties on the other, by discussing the habits, requirements, and properties of the different species.

Three hours each is adequate for forest pathology and forest entomology. The separation of forest ecology, under the term "silvics," from silviculture is proper, and requires three to four hours. Seeding and planting commonly takes four hours. The time devoted to silviculture varies with the amount of instructive field work possible, and in regions of second growth seven hours can be profitably devoted to this subject.

Even with these minimum requirements, scant time is left for the development of zoology leading to fish and game culture, a subject which Cornell has always retained. This is one of the specialties and may increase in importance with the growth of the need for game propagation and protection. Nor can we hope to devote much more than seven hours to wood, either in microscopic study, identification, or treatment.

No effort has been made to present a course giving these studies in sequence. This is a matter which each institution can work out on its own lines. The evidence based on existing courses seems to show unmistakably that a four-

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year course unless heavily overloaded excludes not only a desirable proportion of the vitally necessary subjects of economics, English, history, and languages, but that elementary business subjects such as accounting and additional work in mathematics are impossible, while in engineering, mechanics is omitted. Conformity to a single standard is not desirable, but recognition of the general training of a forester as distinct from specialized training calls for a course based if possible on five years following closely the lines indicated.

H. H. CHAPMAN, *Chairman.*
FILIBERT ROTH.
S. N. SPRING.
C. D. HOWE.
P. T. COOLIDGE.

MEMORANDUM FROM REPRESENTATIVES OF WESTERN FOREST SCHOOLS.

Following the reading of the committee report by Prof. Chapman a memorandum from representatives of a number of the forest schools situated in the States west of the Mississippi, sent to this conference with the request that it be incorporated in its proceedings, was submitted. The memorandum follows:

DECEMBER 6, 1920.

At a meeting of representatives of western forest schools held here in Spokane to-day certain topics to be discussed at the proposed educational conference in New Haven were considered. We desire to forward to this conference the following statement of our position on certain specific questions:

1. While we believe that a better training in forestry can unquestionably be given in five or six years than can be compressed into four, yet on the basis of our experience and of that of parallel courses in similar fields which have come under our observation, we emphatically believe that the regular four-year course leading to the bachelor of science or bachelor of science in forestry degree must include all the essential subjects of a forestry curriculum, so that the graduates therefrom may be considered fitted to commence their professional career. A longer course will not attract the best type of man in the long run, and hence may even result in the turning out of an inferior product.

2. Modern forestry is a field with such variegated and specialized opportunities for work on the part of the forest school graduate that the training given in these schools should not be crystallized into any one fairly rigid curriculum. Instead, a system of controlled electives, commencing at least as early as the junior year, should permit a student to prepare himself specifically for positions in the United States or State forest services, or the lumber industry in any of its branches. The type of specialization to be developed at each school is of course largely a local matter.

DONALD BRUCE, *University of California.*
HUGO WINKENWERDER, *University of Washington.*
DAVID T. MASON, *University of California.*
FRANK G. MILLER, *University of Idaho.*
THORNTON T. MUNGER, *University of Montana.*
THOS. C. SPAULDING, *University of Montana.*

DISCUSSION

Following the Report of the Committee on a Course Leading to the Master's Degree in Forestry.

Prof. Toumey said that he thought the plan presented might be accepted by the conference as an ideal scheme, but that each school must necessarily deviate from it, depending on where that school is located and upon what the demands

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upon its graduates are going to be. In this connection Prof. Morrell, of Colorado, felt that more work should be offered on grazing. Prof. Chapman agreed that this was important, but thought that the inclusion of grazing was a matter which had best be left to schools favorably located for teaching it.

Prof. Hosmer suggested that consideration be given to the question of the expense involved. With the present scale of salaries carried by positions to which forest school graduates are eligible, many students feel that they can not afford to spend more than four years at college. The men with a broader training are usually considerably ahead of the four-year men after the expiration of 10 or 15 years. The question is how to impress this fact on the undergraduate with sufficient force so that he will remain for the extra year at college.

In the discussion of the memorandum forwarded by men of the forest schools of the Western States, it appeared to be the opinion of many of those present at the conference that four years was an insufficient time in which to give a student a completely rounded training in forestry that would enable him to meet in full the demands of the profession. If only four years is spent at college the student tends to lack a proper grasp of the whole subject that will enable him to reach the higher places in the profession.

Several speakers expressed as their opinion that, where possible for an individual student to do so, six years of college training was better than five. The net result of the discussion on this point appeared to be that, while the men of the western schools felt that four years was sufficient, it was the opinion of some of the eastern schools that five years should be regarded as the minimum in professional forestry training.

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REPORT OF COMMITTEE ON SPECIALIZATION BY STUDENTS IN THEIR WORK FOR THE PROFESSIONAL DEGREES OF BACHELOR OF SCIENCE IN FORESTRY AND MASTER OF FORESTRY BEFORE THEY HAVE COMPLETED THE GENERAL COURSE COVERING THE FIELD OF FORESTRY.

Query: Should specialization follow or precede conferring of the professional degree?

In accepting this assignment, certain doubts have arisen concerning the exact limit of the topic, since other phases of specialization are being handled by another committee.[1]

In an explanatory letter Dean Toumey interpreted the question as follows: "To what extent should men be encouraged to specialize after their general science work and before they have had training covering the general field of forestry?"

It is a trite statement that all educational systems are now in a rapid state of evolution. This is particularly true of forestry education, dating back but 22 years in this country. Our profession is changing; new needs have arisen and are arising; new methods must be adopted to provide for them. Agriculture 30 years ago comprised merely field tillage. Now the leading agricultural college in the country trains men for 71 different lines connected with the utilization and conversion of these crops; and to agronomy has been added animal husbandry, and cheese and butter making; even experts in milk distribution are turned out by this institution, believing that the times demand efficient and economical distribution as well as scientific production.

Forestry, like its sister art, agriculture, deals with a land problem. As in the case of agriculture, it is now rapidly expanding, and we at Syracuse are firmly convinced that forest conservation must be practiced in the pulp and sawmill, and in the marts of trade, in order to reduce the drain upon our forests by eliminating waste and putting our manufacturers in a position to adopt the best methods of forestry practice. In short, forestry includes not only crop production—silviculture—but the utilization and distribution of manufactured products, like lumber, paper pulp, etc. So much for the background.

To return to the question asked, under no circumstances would we encourage men to specialize before receiving their professional degree. On the contrary, given time and money we would urge every man who wished to make the most of himself in the forestry profession to take a four years' liberal education—a classical course if you please. After receiving a thorough training in English, modern languages, history, literature, economics, and psychology, with

[1] In presenting the report the chairman of the committee said: "Before taking up the question it should be announced that the committee has not met, and while views have been exchanged to some degree, it is largely my own presentation. I have outlined the contents of this report to the other members of the committee and requested them to send in individual opinions by mail in case they could not be present."

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the usual amount of mathematics and science, he should be thoroughly prepared to take a graduate course in forestry to the extent desired. Such men would not only have a breadth of vision and understanding of actions and reactions and acquaintance with economic laws; they would elevate the whole profession. In addition they would certainly become leaders of thought and molders of sentiment in their various communities along broader lines than forestry. They would possess a tolerance, a philosophy, resources of mind that would make them delightful companions, well-balanced as to soul, able to maintain forestry upon a high plane, which is the ambition of every member of the profession.

Such is the kind of preparation for our profession that should be encouraged in cases where time, funds, and necessary patience are present. The broad vision which characterized the early plans of the forestry movement in America is but a reflection of the liberal education of the leaders of forestry at that time. That the value of the broad cultural education is shared by others can be proven by experience of men teaching science[8] and men employing engineers in an executive capacity.[9]

We regret a change in the entrance requirements of the Yale School of Forestry making prerequisite some sciences and other subjects like mechanical drawing, which makes entrance difficult for B. A. men receiving diplomas from such colleges as Amherst, Williams, and Bowdoin. While it is true that most of these subjects—with the possible exception of mechanical drawing—can be obtained in our classical colleges, the preforestry course would have to be carefully planned.

To us at Syracuse the problem seems different. We do not give a professional degree at the end of four years. We award the straight bachelor of science degree. In addition we consider the men who go into the industries as mere four-year apprentices, and want it clearly understood that no graduate is considered a technical forester until he has received a master's degree.

The war changed many things. Not only did it stimulate educational activities, as the increased enrollment in all our colleges and technical schools proves, but it increased the impatience and the restlessness of the American student, never inclined to prolonged study and patient preparation evidenced by students at continental universities. Always eager, anxious to get into life as soon as possible, the average American student now demands all the short cuts possible. To such men, and probably they are in the majority, the four years of cultural study, plus two to three years of graduate work, is out of the question both from temperamental and financial reasons. Institutions of learning must plan to meet the situation which exists, all the while hoping and planning to change conditions and provide for more prolonged instruction men who are to be leaders in research. Another factor which enters into the educational

[8] A prominent botanist who for many years has carried on research along lines of forest pathology, himself a graduate of one of the leading State colleges and the recipient of a doctorate from a German university, told me that in his earlier years he had scoffed at the theory that a liberal education gave better mental discipline than science. After 15 years of graduate instruction, during which time he had opportunities to compare men from a near-by classical college specializing in botany and forest pathology, with holders of a B. S. degree whom he himself had taught, the conclusion was forced upon him that the men with liberal education made greater headway, had more poise, greater self-reliance and initiative in attacking new problems than the men trained in science alone.

[9] The president of one of the largest manufacturing concerns in central New York, employing in its many plants and departments engineers from practically every technical school of standing, was asked what he considered the best preliminary education for an engineer. His reply came back instantly, "One of the prerequisites for a broad-gauge engineer who will serve later as an executive is a thorough knowledge of Latin."

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which will make future development certain. Those who have not chosen any particular group receive a training comparable to that which the silviculturalist received in most of our colleges during the past 10 years, and can either continue their studies, specializing during their graduate instruction, or shift for themselves after graduation, as many of our foresters have done in the past.

It goes without saying that after entering the employ of a forest industry additional study will be necessary. We point out to our men that if they wish to develop they should study while working, and that study along technical lines will be to their advantage. Men in the paper industry might take courses in mechanical or chemical engineering at a correspondence school, or even a return to college for a year or more of graduate work might be desirable after a couple of years' experience. Four years is too short a time to turn out the kind of apprentice forest industries are now demanding.

The type of men described above are what we call the four-year vocational men; they are the sergeants, corporals, and shavetail lieutenants of the forest industries—not research men. We appreciate the difficulty, yes, the impossibility, of turning out leaders of research in anything less than five to seven years. It seems that most of the men at the Madison conference failed to differentiate clearly between these two types of men. The four-year man, it goes without saying, is not adequately prepared to handle research as a general rule.

For the technical foresters of research temperament, again a maximum of cultural subjects if possible is recommended. This might necessitate for the holder of a B. A. degree two years' work for a master's degree in forestry and at least three years for a doctorate on account of the possible lack of fundamental sciences. Our largest steel plants and factories of all kinds are now seeing the need for research, and whether or not the Madison laboratories require many men of this type, development of forest industries, we believe, will make an ever larger demand for trained men who can solve the original problems which confront them.

SUMMARY OF RECOMMENDATIONS.

1. The ideal forester should possess the broadest fundamental training possible; a classical education if time and funds permit.

2. A condition and not a theory confronts us, since men of limited means, impatient to get to work, are each year entering our State institutions. As a State institution it is our problem to deal as justly by them as we can within the time at their disposal.

3. True forest conservation must provide for elimination or decrease of waste (utilization) as well as increased production (silviculture), and technically trained men are needed to effect these economies.

4. Industries owning and manufacturing forest products should be aided in the economical utilization and distribution of these products, since the practice of forestry by the private owner (four-fifths of our standing timber is privately owned) necessitates foregoing present profits, to be reinvested in timber crops for future harvests.

5. The forest schools have a duty to provide these industries with a better grade of employee, a man having a training in fundamental sciences with some specialization in order that improvements and economies in forest utilization may be effected, to the end that profits for future reinvestment in forestry properties, growing stock, etc., may be assured.

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6. We should limit the group of technical foresters to men who have had at least one year of graduate instruction.

7. Leaders of research, men who add to the supply of knowledge which our growing profession requires, should be trained not less than five to seven years, and every school should always urge its best men to return for graduate work.

This is the goal toward which we are working, holding before us always the conception that the foresters of to-morrow, like those of yesterday, must not only be men of sound training but they must also be imbued with the lofty idealism and the spirit of service for which our profession is and always has been renowned.

F. F. MOON, *Chairman.*
R. C. BRYANT.
J. A. FERGUSON.
W. B. HASTINGS.

DISCUSSION.

Several speakers emphasized the need for the forest schools to offer instruction to men who desired work along particular lines or in special subjects closely related to forestry which can be given better at a forest school than in a college of engineering. But it was clearly brought out that students taking only such work were not to be regarded as bona fide foresters. To be recognized as a forester, the student must satisfactorily pass at least the minimum amount of work that the school has set up.

It was further suggested that were the forest schools to be regarded more truly as professional schools than some now are, it would help to foster in the students the professional viewpoint. To this end the ideal forest school should be regarded not as a graduate school but rather as a school of applied science.

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REPORT OF THE COMMITTEE ON THE SCOPE AND CHARACTER OF TRAINING FOR SPECIALISTS IN FOREST PRODUCTS.[1]

A few words as to the origin of this committee may perhaps be helpful as an introduction to its report and recommendations. In January, 1920, Mr. Earle H. Clapp, assistant forester in charge of the branch of research of the Forest Service, raised with a number of forest schools the question as to the training of men planning to take up research or other work in the field of forest products. He pointed out that the experience of the Forest Service for the past 15 years, particularly at the Forest Products Laboratory at Madison, Wis., had shown that, while such men must be thoroughly trained in engineering or chemistry, their usefulness could be greatly increased by a thorough understanding of the fundamentals of forestry and their relation to the forest industries of the country, and suggested the possibility of working out cooperative courses for students in forestry and engineering which would provide a training of this sort. The interest manifested in this suggestion was so general that arrangements were made for the holding of an informal conference of foresters, engineers, and chemists at Madison on July 24, 1920, to discuss the entire question.

This conference indorsed the general principle that men desiring to specialize in forest products work should have, in addition to their basic training in engineering or the physical sciences, a thorough knowledge of wood as an organic product as well as a clear understanding of the fundamentals of forestry. It also arranged for the organization of a committee to go into the entire question in detail and to present a report with recommendations to this general conference on forest education. In order to cover the field as thoroughly as possible, the committee was composed of two professors of forestry, one from the East and one from the West, a professor of civil engineering, an engineer in industrial work, and a member of the Forest Service. While it has been impossible for the committee as a whole to hold any meetings, its members have secured suggestions bearing on its work from nearly a hundred individuals, including a wide representation of foresters, engineers, and chemists in the Forest Service, in educational circles, and in industrial life. These suggestions have proved most helpful and have been freely used in the preparation of this report.

Before taking up specifically the question of education the committee would like to express its emphatic belief in the need for technically trained men in the field of forest products. This applies not only to highly specialized research, whether conducted by public or private agencies, but to the wide variety of commercial operations involved in the handling of wood from the time it

[1] In connection with this report, attention is called to an article by Hugo Winkenwerder in the October, 1918, issue of the Journal of Forestry, entitled "Some Fundamental Problems in Forestry Education." Dean Winkenwerder is one of the first and most ardent advocates of the principle that it is as much the business of the forest schools to train men for work in forest and wood utilization as for work in forest production.

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leaves the tree till it reaches the ultimate consumer. No one questions the need of technical knowledge in the production and use of steel or concrete; yet wood, being more complex, is more difficult to handle efficiently than either of these. It is inconceivable that the industries using wood, with their hundreds of millions of dollars of invested capital, will not turn more and more to technically trained men to handle the infinite number of problems connected with its most effective manufacture, utilization, and sale.

The industries themselves are just beginning to realize this need. Last fall, for example, Mr. Thomas D. Perry, vice president and general manager of the Grand Rapids Veneer Works, called attention to the need for technical information and technically trained men in a half dozen or more representative industries. Among other things he said:

> It is doubtful whether any other major group of modern manufacturers gives evidence of less scientific knowledge of its products. * * * A survey, no matter how superficial, would demonstrate that while the woodworker may not have needed the engineer in the past, he certainly needs him now. * * * It follows, therefore, that if the woodworking industry and the engineering profession are to be of mutual benefit a broader aspect and a complete readjustment of attitude are necessary. * * * The field for the engineer in woodworking is almost unlimited, but the development of such a new and untried line will take education, patience, and adaptability on the part of all who are vitally interested in the trades that employ so large a proportion of our citizens.

As a result of this address the American Society of Mechanical Engineers at its meeting in New York earlier this month, held a "forest products session" devoted to the woodworking phases of engineering.

Granting, then, the need for technically trained men in the wood-using industries, the question arises as to the particular form which this training should take. So far, both the Forest Service and the industries themselves have, perforce, turned to men trained primarily as engineers, chemists, or foresters, because no other type of man was available. These men have unquestionably rendered valuable service. In doing so, however, they have practically all been laboring under a distinct handicap, the engineers and chemists because they knew little or nothing of botany and forestry, the foresters because they knew too little of engineering and chemistry. In the judgment of this committee, what is needed is a technologist who knows trees and their products from the biological as well as from the engineering and chemical standpoint, and who is able to connect the industrial aspects of wood utilization with the fundamentals of forest practice and forest conservation.

Wood is an organic product. As such, a knowledge of its composition and structure, of the life processes by which it is produced and of the influence of environment on its physical, mechanical, and chemical properties is essential to its most efficient utilization. From an industrial standpoint, a knowledge of the commercial distribution of the important species of trees, of the effect of different methods of forest management on the character and quantity of material produced, and of the relation between the practice of forestry and the maintenance of an adequate supply of wood as a raw material is equally essential. From whatever angle one approaches the question he finds himself led sooner or later to the living tree and to the forest.

A few specific examples may help to make clearer this interrelation between the biological and physical sciences. Take, for example, timber seasoning. On the face of it this is an engineering problem involving simply the removal of water from the wood. The most elementary work, however, makes it apparent that the method by which this removal can be effected to best advantage depends to a very large degree on the structure of the wood, and this in turn

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depends both on the kind of tree and the conditions under which it has been grown. Dendrology, plant physiology, and ecology are thus introduced as factors that can not be ignored. Why is it so much more difficult to dry the southern swamp oaks than the northern upland oaks? The answer is to be found in the field of biology fully as much as in physics or chemistry.

Or take the question of the mechanical properties of wood. We already know that these vary materially with the rate of growth of the tree. This rate of growth in turn depends on the forest conditions under which the tree has been grown, conditions which to a large extent can be controlled by human efforts. The engineer in timber mechanics is thus led at once into the field of silviculture.

Or take the question of decay in structural timbers, railroad ties, pulpwood, or wood pulp. How can one hope to understand or control this without a knowledge of plant physiology and pathology and of organic chemistry? Or take the production of naval stores. Is not a thorough understanding of the biological processes by which resin is produced, of the effect of chipping on these and other aspects of the tree's life, and of the relation between the character of the stand and the amount of resin flow fundamental to the development of efficient methods?

Even in so apparently remote a field as the production of ethyl alcohol from sawdust a knowledge of the processes by which that most wonderful of all laboratories, the living plant, converts one organic substance into another may play a more important part than we now think. The field is so vast and the possibilities so unlimited that we do not at present know enough even to ask intelligent questions regarding a thousand and one problems that will be formulated only by those trained in both the biological and physical sciences. And in whatever line such men may specialize they will find themselves materially helped by a general knowledge of the forest resources from which their raw material comes, of the methods by which these resources may be perpetuated, and of their place not only in individual industries but in the life of the nation as a whole. The point of view which embraces the forest as well as its products constitutes an asset not to be ignored.

The need for men of this type is as real in a wide variety of business positions as in public service. As one forester now in industrial work has expressed it:

> The course should aim not only to prepare men for the forest products laboratory and other research but for lumber-sales engineers, creosote wood sales engineers, chemists in the employ of lumber associations, technical-service engineers, wood-using equipment installations and sales engineers, and the many other lines of work in which a technical knowledge of wood and forestry is of basic value. The field for such specialists has hardly been scratched. Hundreds of potential positions of this kind are simply waiting for the men to fill them.

The committee believes that this is by no means an exaggerated statement of the situation. The mere fact that the industries have not as yet demanded men whose technical training included both the biological and physical sciences and the broader aspects of forestry proves nothing but that they have not been available. It is only a question of time when the need, already felt by the Forest Service, will be recognized by the industries as well. How rapidly the present potential demand will develop into an actual demand is, of course problematical. The committee believes, however, that if the training of such men is begun on a comparatively small scale, it will not be long before the demand for them will considerably exceed the supply. The conclusion seems inescapable that as soon as they prove their worth they will be preferred to those less well equipped for the work at equally good if not better salaries.

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The point has been raised that it is already possible for any one who is willing to spend the time and money to obtain an education in practically any combination of subjects that he desires; in other words, that if a man wishes to become proficient in engineering, chemistry, botany, and forestry, the courses to enable him to do this are already in existence. To a considerable extent this is true. Theoretically, any man can, if he desires, take a complete course in mechanical or civil or electrical or chemical engineering, and follow this up by a complete course in forestry, or vice versa. Practically few men have the time or money to take any such combination, while those who have are usually unwilling to make an expenditure which will not apparently yield a corresponding increase in financial remuneration immediately upon graduation. A further difficulty is that many of the courses would not be presented in such an order or such a way as to give the student the best preparation for his subsequent work, and that comparatively little advanced instruction can now be obtained in such specific subjects as kiln drying, wood preservation, timber testing, wood distillation, etc. There appears, therefore, to be as ample justification for the introduction of special courses for the training of men to enter the field of forest products as there was for special courses in such fields as chemical engineering, sanitary engineering, and electrical-railway engineering, all of which are of comparatively recent origin.

The committee feels that the ideal training for any professional man is a four-year course in the liberal arts followed by as many years of specialization as may be needed to train him for work in his chosen field. Such a combination gives a breadth of view and a background for a man's professional work and other activities that can be obtained in no other way. The committee recognizes, however, that this ideal is impossible of general accomplishment, and that the demand both on the part of industry and of the students themselves for a preparation that will enable them to take up their professional work in the shortest possible time makes it necessary to offer opportunity for early specialization. The committee therefore recommends the inauguration of courses which will enable a man to complete the necessary foundation work in four years and to do a certain amount of specialization in the fifth year. In doing so, however, it wishes it clearly understood that it does not regard it as possible to turn out a thoroughly trained specialist in five years, and that it believes at least one or two years of additional graduate work to be necessary for this purpose.

The committee believes that the essential basis for an adequate course in forest products consists of a thorough training in the fundamental sciences of mathematics, physics, chemistry, and botany. With these as a foundation their practical application to specific problems is comparatively easy. Some training in the more directly applicable of the applied sciences is, of course, highly desirable and even essential. As a general rule, however, it is more important for the student to know why rather than merely how; principles are more valuable than isolated facts. On the other hand, these principles should not be taught in the abstract, but should be given life and interest by teaching them so far as possible with special reference to the student's future activities.

Fundamental work in the pure sciences should be concentrated in the first two years and largely completed by the end of the third year. It should be followed and to some extent accompanied in the third and fourth years by work in the applied sciences, such as steam and gas power, electrical engineering, machine design, forest mensuration, chemical technology, wood distillation, timber testing, etc. Then in the fifth and subsequent years opportunity should be afforded for advanced work in the particular field which the student plans

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to enter, as, for example, in the mechanical properties of wood, the seasoning of timber, the chemistry of cellulose compounds, etc.[2]

In accordance with this general outline, the committee presents tentative curricula of possible courses for the training of engineers and chemists in forest products, not because it anticipates that such curricula will be followed in toto by any institution but as indicative of the ground which it feels should be covered. It realizes perfectly that in the inauguration of work of this sort different institutions will go at it from different points of view, and will desire both to cover somewhat different ground and to cover the same ground in a different way from that suggested. The committee is under no illusion as to the perfection of the suggested courses and believes that in the formative stage of instruction along this particular line rigid standardization is neither desirable nor possible.

With this general statement as to the purpose of the curricula a brief explanation of the reasons for the inclusion or exclusion of certain subjects may be in order. Entrance requirements are included primarily to show the ground assumed to have been covered in the preparatory school as a basis for the college courses prescribed. Those indicated have been selected as representing approximately the present average in spite of the fact that the committee feels that they are rather low and could well be strengthened by the addition of from one to two extra units each in science and mathematics, particularly chemistry, biology, botany, advanced algebra, and trigonometry. If this were done, the two units of foreign language might perhaps be omitted, particularly in view of the fact that they are not to be followed up in college. On the other hand, the very fact that cultural subjects are practically excluded from the college course may make it desirable to require some preparatory school training in them.

Lack of available time has made it necessary to omit such subjects as English literature, logic, modern language, history, sociology, psychology, and philosophy in spite of their obvious cultural, and even professional, value. Acquaintance with the foreign literature pertaining to an individual's particular field will have to be maintained through abstracts and through general or special translations. The committee regards these omissions as a distinct weakness and suggests that students presenting advance credits be encouraged, if not required, to elect cultural subjects such as those mentioned, rather than additional technical work. It regrets very much that it was not able to find room for a third or fourth year course in report writing, including the analysis, preparation, and presentation of data, and urges that special attention be given to these subjects, in which most technical men are weak, in connection with other courses.

The introductory lectures are intended to acquaint the student with the broad fields of engineering, chemistry, and forestry, and to give some idea of

[2] In connection with this paragraph Dr. Hatt comments as follows: "While the traditional curriculum provides for the so-called fundamental subjects for the first two years, which are mathematics, physics, and chemistry, there is a growing belief on the part of educators that the student should be introduced to concrete engineering problems during his first two years, and that a greater power in the use of these fundamental sciences will be gained when they are associated with simple engineering projects. Such evidence as we have shows this device to be of value.

"There is a tendency also to distinguish between the training of the designer of bridges or machines and the constructor or operator. The first group will be given a wider and more thorough training in analysis and pure science. The latter will take less of abstract studies and more work in the college of commerce and business, in the study of shop management, etc."

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the location, abundance, and importance of the raw materials on which these are based. Elementary surveying has been included in spite of the fact that the work of forest products technologists will ordinarily lie indoors, because of the fact that some knowledge of the use of surveying instruments and surveying practice may be of direct value in connection with their regular work. Manual training in the form of wood work, forge, and machine shop is suggested both to train the students to use their hands and to give them through actual contact a first-hand knowledge of some of the more important tools of their profession. Enough of the practice of forestry has been included to enable the technologist to connect wood and other forest products with the growing forest and with the general principles of forest conservation. The principles of political economy and their practical application in industrial organization and management have been included to enable the technologist to correlate his technical specialty with economic conditions and to rise to administrative positions obviously requiring a knowledge of such matters. In the committee's judgment a clear understanding of the principles of economics and of their practical application in business life is almost as essential for the successful engineer or chemist in forest products as a thorough technical knowledge of his specialty.

The value of the other subjects included, because of their direct bearing in the field of forest products, is believed to be self-evident. The number of hours which should be devoted to each subject is, of course, a highly debatable point, and the committee's suggestions in this respect are decidedly tentative. It will be noted that the total number suggested (144 in four years) coincides very closely to that proposed by the committees on undergraduate and graduate courses in forestry.

The tremendous amount of ground to be covered has made it impossible to offer any opportunity for a choice of electives during the first four years. Beginning with the third year, however, two slightly divergent branches are suggested, depending on whether the individual desires to specialize in the engineering or the chemical end of the work. This specialization will naturally be still more marked in the fifth and subsequent years, during which the man should devote his time to advanced work in the particular field he plans to enter. It is also possible that those showing special aptitude early in the course might, with the consent of their faculty adviser, be allowed some choice of subjects prior to this time. The first two years are the same for both lines of work (engineering and chemical), and have been made to agree as nearly as practicable with the courses most commonly required of students in the various schools of engineering, science, and forestry. This will give the student a substantial foundation for almost any line of technical work, and at the same time will facilitate changing his course should he decide later that he prefers to enter some other line.

At this point the committee desires to emphasize again the importance of the fifth year for those who aspire to leadership in either the scientific or business world. This is particularly true in the field of research, for leadership in which the completion of work leading to the degree of doctor of philosophy is highly desirable. And for those who can spare the time, additional collegiate work in the liberal arts is decidedly worth while. The committee recommends as an excellent combination a four-year course leading to the degree of bachelor of arts, so arranged as to include at least the first two years of the special course suggested and followed by the remaining two years of technical work leading to the degree of bachelor of science.

One difficulty in the introduction of a special course in forest products will be the tendency to construct it out of a combination of the courses already in

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existence. To a certain extent this will undoubtedly be necessary. Most of the courses in pure science, for the present at least, will probably have to be taken in substantially their present form, although it would be highly desirable and in some cases may prove possible to give them with special reference to the student's future work. In the applied sciences this should prove still more feasible and the bulk of the work should have some direct bearing on the field of forest products. Thus in the study of engineering materials special attention should be paid to wood rather than to steel or concrete; in machine design to sawmill and woodworking machinery; in forest mensuration to the measurement of logs, cordwood, and standing trees rather than to stem analysis and the preparation of yield tables, etc. In some cases new courses will undoubtedly have to be introduced. An example of this is the so-called course in the "Practice of forestry," the aim of which is to give the engineer or chemist in forest products a bird's-eye view of the more essential features of silviculture, forest management, forest valuation, and forest regulation.

As education in the field of forest products develops and becomes more firmly established, the natural evolution will be toward modifications looking to the inclusion of essentials and the elimination of nonessentials. Short cuts will undoubtedly be devised, new courses will be added or substituted for old ones, and the weak spots in existing courses will be strengthened. The underlying principle should be to have each subject taught, not as an end in itself, but as an integral part of a homogeneous course aimed to give the student the best possible equipment in the time available for a specific field of work. To do this effectively the instructor should have not only a thorough technical knowledge of the fundamental and applied sciences pertaining to his particular subject, but at the same time the necessary point of view. Such men are at present comparatively rare, and it may be some time before any considerable number of thoroughly competent instructors will be available.

In this connection the committee would like to emphasize the desirability of enlisting the student's interest and giving him the right point of view from the very beginning of this course. To a considerable extent this can be done by extra curriculum activities, such as the organization of student clubs and the giving of special lectures by foresters, engineers, chemists, business men, and others of prominence and reputation in their respective fields. Such activities can well be made to play an important and helpful part in the student's training.

These suggestions constitute the broad outlines of the scope and character of special courses for the training of technologists in the field of forest products. Who should take the leadership in securing their introduction? In the judgment of the committee this is a duty which devolves primarily upon the foresters and forest schools of the country. Careful analysis of the proposed courses will show that they contain many subjects quite foreign to the curricula of the engineering schools, such as botany, plant physiology, tree diseases and injuries, and forest mensuration. Such subjects as silvics, wood technology, engineering mechanics, and practice of forestry are equally foreign to the colleges of science. On the other hand, hardly a subject is included which is not already required or might logically be required by some forest school. Practically all of the forest schools now give at least elementary instruction in such subjects as timber tests, kiln drying, wood distillation, and wood preservation. A good deal of engineering and chemistry is already required by those offering advanced work in these lines and in logging engineering. To require such additional instruction in these fields as might be necessary would be but a step, and would be wholly in line with the development of forest education.

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From still another angle leadership in the matter falls upon the foresters. Forestry as a profession aims primarily at the conservation and perpetuation of our forest resources. In attaining this end it must take into account three distinct but closely related fields of activity—(1) raising the forest crop (silviculture and forest management), (2) harvesting the forest crop (lumbering and logging engineering), and (3) utilizing the forest crop (wood utilization). Underlying all three is forest economics. The way in which each of these fields is handled reacts directly upon the effectiveness with which our forests are used and must necessarily be a matter of concern to the forester. So far foresters have interested themselves in these activities in approximately the order named. The production of the forest crop for a time absorbed practically their entire attention. Then they became interested in its harvesting and turned to the technically trained logging engineer. Now their attention is being attracted more and more to its utilization, with an increasing realization that the way in which this is handled has a very direct bearing on forest conservation. Furthermore, the very fact that wood is an organic product and that its utilization is closely connected with its production and its harvesting make it highly desirable that men working in the field of forest products should have the forester's point of view, which can of course be secured to best advantage if the leadership in their training is taken by the forest schools.

Obviously this does not mean that all of the work must be given in departments or schools of forestry. Even those forest schools which go farthest in this direction do not attempt to give all of the required subjects. In the judgment of the committee the exact amount of work which should be given in the various departments or colleges is a matter to be worked out locally. In some cases a considerable number of subjects, such as mathematics, physics, chemistry, engineering, mechanics, machine design, steam and gas power, etc., can undoubtedly be given to best advantage in the colleges of engineering or science, while the work in wood identification and structure, tree diseases and injuries, forest mensuration, the practice of forestry, timber seasoning, wood preservation, wood distillation, etc., would naturally be given in the forest schools. In other cases the forest schools themselves may desire to go somewhat further than this. The important point is that the work should be developed under the leadership of the forest schools in as close cooperation with the other colleges as local conditions make desirable.

The committee feels that it is also important that the work should be undertaken at first at a comparatively small number of institutions having strong staffs in both forestry and engineering. It is obviously not within the province of the committee to suggest what institutions these should be. It does, however, wish to emphasize the fact that in its judgment there is danger in having the work undertaken too generally and by schools not thoroughly equipped to handle it. After it is once well under way at a few institutions and the best lines of development have been indicated by actual experience, it can be extended to others as rapidly as the need for additional men becomes apparent. This raises the entire question of promoting economy and efficiency in forest education by having different schools specialize along different lines.

The question as to the degree or degrees which should be granted men with this sort of training seems to the committee of comparatively minor importance at this time. At the end of four years the degree of B. S. would seem to be appropriate. At the end of five years there are several possibilities. Among these may be mentioned master of science in engineering, in chemistry, or in forestry, engineer in forest products, chemist in forest products, and master of

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forestry. Some have suggested the advisability of granting no degree at the end of four years in order to provide an additional incentive for men to stay through the fifth year. The creation of new degrees has also been suggested, and the committee sees no objection to this if the institutions at which the work is given feel that at present they have no degree sufficiently descriptive of the training secured to be satisfactory.

Whatever degree may be decided on, the committee feels that men with such a training as it has suggested would be qualified to handle the great bulk of the problems encountered in the field of wood utilization, whether in private industry, in educational institutions, or in public service. At the same time it recognizes the fact that there will be occasional problems requiring the services of technical men in allied fields, such as mechanical engineering and organic chemistry. Such problems will, however, be the exception rather than the rule. In this connection the committee expresses the hope that the Forest Service will encourage the development of courses along the lines indicated by giving preference in civil-service examinations, through the rating of training and experience, to men with the combined training suggested.

Much hard work must be done before such courses can be satisfactorily formulated and effectively given. The committee realizes only too well that it has made little more than a beginning and that the suggestions which it has been able to offer are far from the last word on the subject. If they stimulate and point the way to further action, they will have served their purpose. Comprehensive and thoroughgoing studies must still be made of the precise duties and requisite qualifications of men in forest products work. The particular combination of subjects best suited for the preparation of such men must be determined. Innumerable practical details in the introduction of new courses, the modification of old ones, and the construction of new curricula must be worked out. This is primarily a task for the forest schools. It is, however, one in which the profession as a whole can be of material assistance. The committee, therefore, recommends the appointment by the Society of American Foresters of a committee to continue the work which it has begun. This committee, in which representatives of the forest schools should, of course, play a prominent part, could render a real service by conducting further investigations, making specific recommendations, and cooperating with educational institutions in formulating and securing the introduction of such curricula as may be deemed advisable.

In conclusion, the committee desires to emphasize the following points:

1. That there is a very large and as yet undeveloped field for the employment of technically trained men in the utilization of forest products.

2. That these men should have a thorough fundamental training in mathematics, physics, chemistry, and botany as a basis for later specialization in any given line, together with sufficient forestry to give them the forester's point of view.

3. That the special four-year curricula suggested should, if possible, be preceded by collegiate work in the liberal arts and followed by graduate work in the individual's chosen field.

4. That the forest schools, in cooperation with schools of engineering and science, should take the leadership in securing the introduction of such curricula.

5. That at the outset the work should be undertaken at comparatively few institutions and extended later as the opportunities and demand for such men become more apparent.

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6. That the Society of American Foresters should appoint a committee to consider more fully such questions as the need and opportunities for men of this type, their precise duties and qualifications, the exact ground which should be covered in their training, and ways and means of providing adequate opportunities for such training.

S. T. DANA, *chairman.*
W. K. HATT,
R. S. HOSMER,
C. E. PAUL,
HUGO WINKENWERDER.

SUGGESTED COURSES FOR THE TRAINING OF ENGINEERS AND CHEMISTS IN FOREST PRODUCTS.

Entrance Requirements for Engineers and Chemists.

Required:	Units.
English	3
French or German (both units in same language)	2
History	1
Algebra	1½
Plane geometry	1
Solid geometry	½
Physics	1
Total	10

Optional:	Units.
Advanced algebra	½
Biology, botany, or chemistry	1
Civics and American Government	½–1
Drawing	½–1
Economics	½–1
English	1
French, German, Spanish, or Greek	1–3
History	1–3
Latin	1–4
Physical geography, geology, zoology, or physiology	½–1
Trigonometry	½–1
Vocational, industrial, or commercial subjects	½–3
In all	5

College Curriculum for Engineers.

FIRST YEAR.

FIRST SEMESTER.	Hours.
English (1)[1]	3
Advanced algebra and trigonometry (3)	4
Chemistry (10)	3
Botany (29)	3
Drawing (6)	3
Wood work (8)	2
	18

SECOND SEMESTER.	Hours.
English (1)	3
Analytic geometry (4)	3
Chemistry (10)	3
Botany (29)	3
Drawing (6)	3
Forge shop (9)	1
Introductory lectures (2)	2
	18

SECOND YEAR.

Differential calculus (5)	3
Physics (18)	3
Physics laboratory (19)	2
Qualitative analysis (11)	4
Plant physiology (30)	3
Dendrology and forest distribution (31)	3
	18

Integral calculus (5)	3
Physics (18)	3
Physics laboratory (19)	2
Quantitative analysis (12)	4
Silvics (32)	3
Elementary surveying (7)	3
	18

[1] Numbers in parentheses refer to the accompanying description of courses.

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Between the second and third years each student is required to spend at least 10 weeks in some kind of woods work, as, for example, at a logging operation, at a summer forestry camp, or in timber reconnoissance or similar work with the United States Forest Service or other forest organization.

THIRD YEAR.

FIRST SEMESTER.	Hours.
Engineering mechanics (20)	4
Mechanical laboratory (21)	1
Organic chemistry (13)	3
Steam and gas power (22)	3
Plant pathology (33)	3
Wood technology (35)	4
	18

SECOND SEMESTER.	Hours.
Engineering mechanics (20)	4
Mechanical laboratory (21)	1
Organic chemistry (13)	3
Forest mensuration (36)	2
Tree diseases and injuries (34)	4
Wood technology (35)	4
	18

Between the third and the fourth year each student is required to spend at least 10 weeks in connection with one or more wood-using industries.

FOURTH YEAR.

FIRST SEMESTER.	Hours.
Economics (39)	3
Practice of forestry (37)	3
Machine design (23)	3
Hydraulics (24)	3
Masonry construction (25)	3
Lumbering and wood-using industries (38)	3
	18

SECOND SEMESTER.	Hours.
Economics (39)	3
Industrial organization and administration (40)	3
Electrical engineering (26)	3
Engineering materials (27)	3
Structural design (28)	3
Wood-using industries (38)	3
	18

FIFTH YEAR.

Advanced work, chiefly elective, along such lines as—

Timber physics,
Timber mechanics,
Wood utilization,
Wood technology,
Wood preservation,
Structural engineering and design,

and including regular seminar work and the preparation of a thesis.

OTHER GRADUATE WORK.

To include research along the specific lines in which the individual student desires to specialize.

College curriculum for chemists.

FIRST YEAR.

FIRST SEMESTER.	Hours.
English (1)	3
Advanced algebra and trigonometry (3)	4
Chemistry (10)	3
Botany (29)	3
Drawing (6)	3
Woods work (8)	2
	18

SECOND SEMESTER.	Hours.
English (1)	3
Analytic geometry (4)	3
Chemistry (10)	3
Botany (29)	3
Drawing (6)	3
Forge shop (9)	1
Introductory lectures (2)	2
	18

SECOND YEAR.

FIRST SEMESTER.	Hours.
Differential calculus (5)	3
Physics (18)	3
Physics laboratory (19)	2
Qualitative analysis (11)	4
Plant physiology (30)	3
Dendrology and forest distribution (31)	3
	18

SECOND SEMESTER.	Hours.
Integral calculus (5)	3
Physics (18)	3
Physics laboratory (19)	2
Quantitative analysis (12)	4
Silvics (32)	3
Elementary surveying (7)	3
	18

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Between the second and the third year each student is required to spend at least 10 weeks in some kind of woods work, as, for example, at a logging operation, at a summer forestry camp, or in timber reconnaissance or similar work with the United States Forest Service or other forest organization.

THIRD YEAR.

FIRST SEMESTER.	Hours.	SECOND SEMESTER.	Hours.
Engineering mechanics (21)	4	Engineering mechanics (21)	4
Mechanical laboratory (22)	1	Mechanical laboratory (22)	1
Organic chemistry (13)	3	Organic chemistry (13)	3
Organic synthesis and analysis (14)	2	Organic synthesis and analysis (14)	2
Plant pathology (33)	3	Tree diseases and injuries (34)	4
Wood technology (35)	4	Wood technology (35)	4
	17		18

Between the third and the fourth year each student is required to spend at least 10 weeks in connection with one or more wood-using industries employing chemical processes.

FOURTH YEAR.

FIRST SEMESTER.	Hour.	SECOND SEMESTER.	Hour.
Economics (39)	3	Economics (39)	3
Practice of forestry (37)	3	Industrial organization and administration (40)	3
Physical chemistry (15)	3	Physical chemistry (15)	3
Chemical technology (16)	4	Electrical engineering (26)	3
Forest mensuration (36)	2	Industrial analysis (17)	3
Lumbering and wood-using industries (38)	3	Wood-using industries (38)	3
	18		18

FIFTH YEAR.

Advanced work, chiefly elective, along such lines as—

Derived products,
Wood preservation,
Cellulose chemistry,
Biochemistry,
Physical organic chemistry,
Chemical industries,

and including regular seminar work and the preparation of a thesis.

OTHER GRADUATE WORK.

To include research along the specific lines in which the individual student desires to specialize.

Brief description of courses.

1. *English.*—Composition, rhetoric, and general literature, with particular emphasis on the clear and logical presentation of facts and ideas. (E and C, I, 1 and 2.)[3]

2. *Introductory lectures.*—A general survey of the fields of engineering, chemistry, and forestry, indicating briefly the character of work, opportunities open, kind, extent, and distribution of the principal raw materials used, etc. (E and C, I, 2.)

3. *Advanced algebra and trigonometry.*—College algebra beyond quadratics; plane trigonometry. (E and C, I, 1.)

[3] Letters and numbers in parentheses following each course indicate whether it is for engineers or chemists (or both), and the year and and semester in which it is given. Thus, E and C, I, 1 and 2 indicate that the course is for both engineers and chemists and that it is given in the first year, first and second semesters; C, IV, 1, that the course is for chemists and is given in the fourth year, first semester, etc.

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4. *Analytic geometry.*—Plane and solid analytic geometry. (E and C, I, 2.)

5. *Calculus, differential and integral.*—Principles of differential and integral calculus applied to functions of one and several variables. (E and C, II, 1 and 2.)

6. *Drawing.—Lettering*, mechanical drawing, free-hand drawing, and machine sketching. (E and C, I, 1 and 2.)

7. *Elementary surveying.*—Use of surveying instruments; fundamental surveying methods; measurement of lines, angles, and areas. (E and C, II, 2.)

8. *Woodwork.*—Use and care of bench and lathe tools, and of woodworking machinery; preliminary exercises in pattern making, joinery, and cabinet work. (E and C, I, 1.)

9. *Forge shop.*—Forging, welding, tool dressing, tempering, etc. (E and C, I, 2.)

10. *Chemistry.*—General theory; classification and properties of nonmetals, metals, and their compounds. (E. and C, I, 1 and 2.)

11. *Qualitative analysis.*—Principles and practice of qualitative analysis. (E and C, II, 1.)

12. *Quantitative analysis.*—Gravimetric and volumetric determinations, including electrolytic methods and the calibration of weights and volumetric apparatus. (E and C, II, 2.)

13. *Organic chemistry.*—Composition and characteristics of the principal classes of organic compounds, with emphasis upon class reactions and structural theory, and with special reference to wood and other forest products. (E and C, III, 1 and 2.)

14. *Organic synthesis and analysis.*—Preparation and analysis of typical organic compounds. (C, III, 1 and 2.)

15. *Physical chemistry.*—Constitution and structure of matter; general properties of gases, liquids, and solids; phenomena of solutions; colloids; electrochemistry; thermochemistry. (C, IV, 1 and 2.)

16. *Chemical technology.*—Application of chemical and physical principles to problems of chemical manufacture, together with the principles of standard types of machinery and apparatus used by the chemical industries. (C, IV, 1.)

17. *Industrial analysis.*—Analysis of a variety of materials in common industrial use, with emphasis on the significance of procedure and results. (C, IV, 2.)

18. *Physics.*—Fundamental principles of gravitation, heat, light, sound, mechanics, magnetism, and electricity. (E and C, II, 1 and 2.)

19. *Physics laboratory.*—Physical measurements and experiments in the fields covered by Course 18. (E and C, II, 1 and 2.)

20. *Engineering mechanics.*—Theoretical and applied mechanics, including fundamental concepts and general principles of equilibrium and motion; statics, kinetics, and mechanics of materials; application of principles and methods to engineering problems. (E and C, III, 1 and 2.)

21. *Mechanical laboratory.*—Experiments on engines, turbines, pumps, boilers, and other machines; shop practice on the drill, lathe, planer, and other standard machine tools. (E and C, III, 1 and 2.)

22. *Steam and gas power.*—A general study of steam and gas power plants and equipment; relative costs and advantages of different types and sizes of machinery; combustion, handling, and storage of fuels used in power plants. (E, III, 1.)

23. *Machine design.*—Design of machines and machine parts, including advanced drawing, and with particular reference to sawmill and woodworking machinery. (E, IV, 1.)

24. *Hydraulics.*—Hydrostatics and hydrodynamics, including water pressure, water flow, friction, etc. (E, IV, 1.)

25. *Masonry construction.*—Principles and design of masonry structures, including the properties of concrete and reinforced concrete. (E, IV, 1.)

26. *Electrical engineering.*—Essentials of electrical engineering, including the generation, transmission, and application of electrical power. This and Course 22 together cover the subject of prime movers. (E and C, IV, 2.)

27. *Engineering materials.*—Properties and requirements for materials, particularly wood, used in engineering construction; effect of methods of manufacture upon the quality of the material; specifications and standard tests used to secure acceptable grades of material. (E, IV, 2.)

28. *Structural design.*—Computation of stresses; design of columns, beams, and girders; building laws and specifications. (E, IV, 2.)

29. *Botany.*—Studies of the form, structure, life processes, and (briefly) classification of the principal groups of plant life. (E and C, I, 1 and 2.)

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30. *Plant physiology.*—Absorption, nutrition, growth, and reproduction, with special reference to woody plants. (E and C, II, 1.)

31. *Dendrology and forest distribution.*—Identification, classification, and distribution of trees and shrubs, with special reference to those of commercial importance. (E and C, II, 1.)

32. *Silvics.*—Relation between trees and forests and their environment; life history of the forest; silvical characteristics of the more important timber trees and types. (E and C, II, 2.)

33. *Plant pathology.*—Nature, cause, and control of plant diseases, with special reference to diseases of trees. (E and C, III, 1.)

34. *Tree diseases and injuries.*—Detection, prevention, and eradication of tree diseases and wood decay; relation between decay and such processes as air drying, kiln drying, gluing, painting, creosoting, etc.; effect of fire, insects, lightning, wind, frost, etc., on trees and their products. (E and C, III, 2.)

35. *Wood technology.*—Gross and microscopic structure and physical, chemical, and mechanical properties of wood, with special reference to its identification and uses, and including a consideration of defects. (E and C, III, 1 and 2.)

36. *Forest mensuration.*—Form and content of trees and logs, with special reference to the measurement of standing timber and of logs, cordwood, and other forest products. (E, III, 2; C, IV, 1.)

37. *Practice of forestry.*—Place of forestry in the life of a nation; elementary principles and practice of fire protection, silviculture, forest management, forest organization, and forest administration. (E and C, IV, 1.)

38. *Lumbering and wood-using industries.*—Brief survey of the methods of logging and milling in the principal forest regions of the United States, including grading rules; consideration of the principal wood-using industries, with special reference to their economic importance, woods used, and methods of operation. (E and C, IV, 1 and 2.)

39. *Economics.*—General principles of economics, including production of wealth, business organization, value and price, money and banking, trade and commerce, distribution, labor problems, transportation, public finance, etc. (E and C, IV, 1 and 2.)

40. *Industrial organization and administration.*—Modern methods of industrial organization, administration, and production, including such factors as methods of planning work and insuring production, administrative reports, time-keeping and cost-finding systems, plant location and arrangement, etc. (E and C, IV, 2.)

COMMENTS BY DEAN WINKENWERDER.

In connection with the curricula I want to go on record with reference to the following points:

(*a*) I believe the committee should make a distinction between the type of individual that will become primarily a research man (either in the Government service or in the industries) and the type that will enter the industrial field with a view to working into the administrative or business end of the industry. This distinction can readily be made by adopting the elective system. The demand for men trained in forest products will be many times greater in the latter than in the former field. The curricula as presented are, to my mind, arranged primarily for training research men.

(*b*) The Elective System. The modern method in education is the elective system. In technical courses such as these, a system that prescribes certain fundamentals and ends with advanced, highly specialized work, admission to which is guarded by carefully selected prerequisites, has many advantages. It opens up a wide field for specialization in that it can be adjusted to meet any specific needs; yet keeps the curriculum simple and makes it easy to administer. Fundamental courses will serve as general prerequisites and breadth of training. The prerequisites to the advanced courses will lend purpose and direction to the work of the student and prevent him from dissipating his energies over a large number of unrelated subjects. The final advanced courses, if properly organized, will tie in the theoretical work with the actual work the graduate will be called upon to do when he leaves the university. In courses acknowledged by the committee to be merely suggestive and which will need to be modified from time to time as we learn more specifically the nature of the

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work to be done by the graduate, it would certainly seem that the elective system would lend itself far better to the conditions than a definitely prescribed curriculum.

(c) It is now quite generally conceded among educators that the five-year curriculum is not working out satisfactorily, because the majority of students will not stay five years. This means that much of the work will have to be complete in and of itself, i. e., we shall have to prepare the student to fit into some definite job at the end of his fourth year, and this will be possible for many of the industrial jobs. This will mean that a great deal of the work scheduled for the fifth year, particularly in the engineering course, will need to be given to the undergraduates.

DISCUSSION OF THE REPORT ON THE SCOPE AND CHARACTER OF TRAINING FOR SPECIALISTS IN FOREST PRODUCTS.

Prof. B. F. Brann, of the University of Maine, outlined the work done at that institution to train men for the pulp and paper industry; the graduate is a chemical engineer with a general knowledge of forestry.

Dean Toumey pointed out the danger that courses on specific details and technique tended to make the student an artisan and to get away from the ideal of what a fundamental education should be. Proper training should ground the student in fundamentals and develop in him the power of philosophical reasoning.

Mr. C. P. Winslow, of the Forest Products Laboratory, Madison, Wis., emphasized the point made by Dean Toumey. If a man specializes too intensively as an undergraduate, he may find later that his interests lie in a different direction; a broader and more fundamental training is of greater value. This has been proved to be true at the Forest Products Laboratory. There is an increasing demand and good field for men that might be called forest-products engineers. But to get the necessary training takes more than four years. One trouble at the laboratory has been to get men from college who have both the fundamental background, plus knowledge of some particular branch, like chemistry. Many men have had to get this after coming to Madison. The demand at the laboratory is not great enough to justify the forest schools in developing men for that work alone, but there is a demand for such men in the industries. The forest schools are in a position to meet this need. The important thing is to establish a good four-year undergraduate course on which those who wish to go on for further study can base specialized work in one or more particular lines. Such well-grounded men will be able to progress satisfactorily in a variety of wood-working industries.

In answer to a question as to what salary such a man might expect (with regard to its bearing on inducing him to remain longer at college), Mr. Winslow replied that generally the graduate is looked upon as an untried man and is paid accordingly. Men who have had training subsequent to college may get $3,000 to $4,000, with an arrangement for a bonus on the sales that they increase. If such men can develop the industry, they are apt to rise fast. One man of 28, five years out of college—two and a half at the laboratory and an equal time in educational work—went to a commercial company at a salary of $5,000. The minimum salaries that are offered men who have been at the laboratory two or three years range around $3,000 up to $6,000 or $7,000.

Profs. Moon and Hosmer both emphasize the point that there was need for two types of men: (1) The man who had had four or five years at college and begins as an apprentice, as it were, developing his vocation while learning the industry; and (2) the man of research type who, after five to seven years of college work, emerges as a highly trained specialist. The schools can provide definite courses for the first type; for the latter it is a question of individual graduate study.

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REPORT OF THE COMMITTEE ON THE FIELD AND SCOPE OF VOCATIONAL TRAINING IN FORESTRY.

This report is presented in two parts. The first, dealing with vocational education in forestry in a more general way, was prepared by the chairman of the committee, Prof. James B. Berry. The second part, dealing with ranger schools, was prepared by Prof. E. A. Ziegler.

Part I. VOCATIONAL EDUCATION IN FORESTRY.

Vocational forestry is differentiated from professional forestry by extent of training rather than kind of subject matter. In general, the positions which are more intimately concerned with "doing"—with the carrying out of certain operations involving skills—are classed as vocational. In a broad sense, however, the term includes practically all of the so-called professional occupations. There is, then, no hard and fast line separating vocational from professional forestry.

The field of vocational education in forestry includes five lines of preparation, all of which may be promoted under the vocational education act (Smith-Hughes) of 1917. Briefly, these are as follows:

1. Farm-woodlot manager. Here forestry enters as an adjunct to farming and becomes one of several farm enterprises. Not infrequently the subject of woodland forestry will be handled as a phase of horticulture, especially as regards ornamental planting, windbreaks, care of shade trees, tree surgery, and nursery practices. The fact must be continually borne in mind that vocational training in agriculture is the object of this course of study, and the subject of forestry enters on the same basis as field crops, animal production, fruit growing, and farm shop. The course of training may extend over a period of four years or less. It should include six months of supervised farm practice.

2. Forest ranger (Federal and State civil service). This phase of vocational forestry involves training in many of the skills of civil engineering, silviculture, lumbering, live-stock growing, elementary law, fish and game protection and propagation, etc. In general, these positions are filled by graduates of professional and semiprofessional schools. Several hundred vacancies occur each year, and there is a growing demand for a limited number of vocational forestry departments in secondary schools for the preparation of rangers. The period of training may consist of four years or less. This course may be on a basis of four months of supervised work or alternate days or weeks devoted to supervised practice.

3. Straw bosses for woods operations. The course of training is quite similar to that offered for the preparation of foremen in industry. In addition to technical knowledge and skills there is involved ability to handle men. The subjects taught include certain skills in surveying, mechanics, lumbering, handling live stock, etc. On every operation there are certain men who, with a short, intensive course of training, will develop into efficient foremen. In general, this course may be offered in evening classes.

4. Skilled workers (sawyers, etc.) in sawmills, planing mills, handle factories, wood-pulp mills, tie pickling plants, and similar establishments. In this

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case the course of training is more concerned with technical knowledge; skills are acquired in the ordinary course of the day's work. The instruction is highly specialized and varies for each industry. In general, there is a place for evening classes in connection with every large wood-using industrial plant.

5. Skilled workers in tree surgery, forest nurseries, woodland and estate management, city forestry, and similar positions. The type of instruction varies for the position and covers both technical information and the acquiring of skills. Frequently indeed the question of skills will be all important. Ordinarily such training does not involve the development of managerial ability, such as is required in a foreman. A short, intensive period of training, such as was developed by the War Department, will prove most successful. Alternate days or weeks should be devoted to supervised practice.

ORGANIZATION OF VOCATIONAL EDUCATION UNDER THE ACT OF 1917.

The administration of the Vocational Education Act (Smith-Hughes, 1917) is placed in the hands of a Federal Board of Vocational Education (which is composed of seven members—the Secretaries of Agriculture, Labor, and Commerce, the Commissioner of Education, and three lay members representing labor, agriculture, and industry) and State boards designated by the legislative bodies of the respective States. In general, the State board of education has been so designated and the State superintendent of education appointed executive official for vocational education. In many States an assistant to the State superintendent is designated director of vocational education and the responsibility for administering the act in the State is delegated to this official. The State director is assisted by assistant directors and supervisors in the various fields of vocational training.

The requirements of the vocational educational act are:

1. The instruction must be under public supervision and control.
2. It must be adapted to the needs of persons of 14 years of age and over.
3. It must be of less than college grade.
4. The instruction in agriculture must include six months of supervised practice.
5. The instruction in trades and industries must include one-half time devoted to practice work on a productive basis.

According to the 1920 report of the Federal board there are at present in the United States 3,155 vocational schools and departments taking advantage of the provisions of the vocational education act, of which 1,375 are in agriculture, 700 in home economics, 758 in trades and industries, and 322 continuation.

While the subject of forestry is not mentioned specifically in the act, the interpretation of the Federal board is that productive forestry (silviculture) is a part of agriculture, and forest utilization a part of the field of trades and industries. Much may be judged from the basis of apportionment; if the workers of the particular industry are numbered as "rural" by the United States Census, the presumption is that the industry is rural in nature and may be classified as agricultural. The fact that forestry appears in both fields necessitates a discussion of the possible development of vocational forestry in each field.

FORESTRY IN VOCATIONAL AGRICULTURAL SCHOOLS AND DEPARTMENTS.

In the field of vocational agriculture the high school has been universally selected as the institution best fitted for this purpose. Usually the work in agriculture is organized as a department, and it is optional with the studer

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which department he specializes in. In many States special vocational schools in agriculture have been established, and the students are required to pursue agricultural subjects during at least a portion of the course. In many States the curriculum of the vocational department in agriculture is outlined in the State plan in a general way. For the State of Pennsylvania the following course of study is required, although some latitude is allowed in adapting the instruction to local needs.

Curriculum of the vocational department in agriculture in Pennsylvania.

FIRST YEAR.

Vocational and related subjects—one-half day.	Periods per week.	*Academic subjects—one-half day.*	Periods per week.
General science		English	5
Poultry		Civics	3
Mechanical drawing		Etymology or foreign language	5
Vegetable gardening		Health inspection	2
Farm shop work			
Agricultural project			
	15		15

SECOND YEAR.

Farm crops		English	5
Ornamental gardening		Modern European history	3
Farm forestry		Economic geography or foreign language	5
Farm bookkeeping		Health instruction	2
Farm shop work			
Agricultural project			
	15		15

THIRD YEAR.

Dairying		Chemistry or physics	5
Animal husbandry		English	5
Fruit raising		History, American	3
Forging and farm shop work		Health instruction	2
Agricultural project			
	15		15

FOURTH YEAR.

Farm mechanics		Chemistry or physics	5
Farm management		English	5
Rural law		American economics history	3
Rural sociology		Health instruction	2
Agricultural project			
	15		15

The content of the course in woodland forestry, as a part of the four-year training period in vocational agriculture for high schools, is determined largely by the farm, community, and regional needs. Not alone the requirements of the present and immediate future must be given consideration, but also the probable developments of the more distant future. Wood differs from other crops chiefly in that a considerable period of time is required for the products to reach usable form. In the South, approximately 60 per cent of the total area is in woods, nearly every farm including a larger or smaller woodland. In the undeveloped sections it is not uncommon to find from 50 to 80 per cent of the individual farms in second-growth forest. Eventually an increasingly large part of the wooded areas will be required for the production of food crops to

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satisfy the demands of a rapidly growing population. Agricultural development of the future must not be unduly stressed, however, since wood is as important a factor in our present-day civilization as is food material. The tendency in older countries is to provide for increasing populations through the introduction of more intensive methods of utilizing the soil. Germany maintains 26 per cent of her area in wood production.

THE COMMUNITY SURVEY.

The farm-to-farm survey, involving also a study of wood markets and farm requirements for wood, will indicate the relative importance of the wood crop and serve as a basis to determine the time, emphasis, and content of the course of study. Because of the bulky character of woodland products, the factors of transportation, involving the condition of country roads, distance to railroad, and railway rates, require special study, since these are often the controlling factors in marketing wood at a profit. Too often the farmer is at the mercy of the local dealer simply because he is unable to get his logs to market. The marketing of woodland products is frequently as difficult of solution as is the handling of perishable crops.

The farm requirements for repair and other wood products vary according to the intensiveness of agricultural practices, the demands upon the woodland being greatest in well-developed communities. Thus, the total area of woodland in a community is, in itself, not a true index to the relative importance of forestry in the course of study, market demands and farm needs demanding equal consideration. The coal situation during the recent war brought out the fact that many communities throughout the country used little or no coal for domestic heating.

Just where woodland forestry will be introduced into the four-year course of study depends upon its relative importance as a farm activity. In a community which is being developed along the line of diversified agriculture, and it is from this standpoint that the small woodland possesses the greatest possibilities in supplying the farm requirements for wood, the subject matter in forestry may well be introduced into the second or third year work, combining it with allied agricultural subjects to make a full year's work. Where farming practices are more specialized, the arrangement of the course of study must, of necessity, be modified. Thus, in a community where grazing is the principal agricultural interest, considerable time should be devoted to wood production as an adjunct to the growing of live stock. On the other hand, in a specialized market-gardening community where no woodlands occur, the work in forestry may be reduced to a minimum.

PROJECT WORK.

In general, the course of study in woodland forestry will be built up about the projects of possible interest to the pupils of a given community. Because of the run-down condition of the average woodland, the project of greatest interest to the boy will be along the line of reorganization on a profitable basis. Projects, both major and minor, of possible interest in certain communities are:

MAJOR PROJECTS.

Reorganization of the farm woodland on a profitable basis.
Management of the farm woodland in the production of wood.
Turpentine orcharding as an adjunct to wood production.
Basket willow production.
The production of nursery stock.
The management of the sugar bush.

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and can not realize its importance in the national economy, and the foresters in education must accept the responsibility to insure adequate preparation in forestry for the prospective teachers of vocational agriculture. Considerable care should be taken in outlining such a course, however, and the forester must make a critical survey of the field of activity of the vocational teachers to determine just what subject matter will be of value to them. He must realize that the teacher, in his particular community, makes a similar study to determine the subject matter needed by his pupils.

Part II. RANGER SCHOOLS.

By PROF. E. A. ZIEGLER.

The purpose of the "ranger school" is to train men to fill positions in forestry below the grade of professional forester. For some time to come the special ranger school attached to some higher institution—agricultural college, professional forest school, special State ranger school, or private ranger school—will supply this demand. The following notes have to do with this field:

In the practice of forestry there must be a number of rangers (or men of similar grade) to each forester. Since there are upward of 22 schools giving professional forestry courses, one would expect several times that many schools training rangers. On the contrary we find very few schools training rangers. The conclusion, therefore, is that in the present stage of forest development in America the ranger, woods foreman, or under forester is not a school-trained man, and that the demand for such a training is not very strong.

This is not a condition peculiar to forestry. The engineer in carrying out his plans uses apprentice-trained foremen. Thus railroad track foremen and master mechanics carry out the instructions of the maintenance-of-way engineer and the civil engineer in charge of railroad construction. The mine engineer relies on the mine boss to carry out his plans. The architectural engineer relies on the boss mason, the boss bricklayer, and the boss carpenter. All these vocational men are apprentice-trained men, and the reason is not far to find.

The applications of architectural engineering and civil engineering are so varied and specialized that no one course for vocational engineers could cover the field. Further, the primary qualifications for these positions are manual dexterity and the ability to handle men. This is a training of "doing" and is very difficult to impart in a school, unless it is a shop school or "school on the job."

Physicians need trained nurses to carry out their prescribed treatment. They are not trained by studying the pharmacopœia and learning rules in a classroom. They are trained in the hospital and learn the medical side while learning the manual side. This "learning in doing" is being applied more and more even to professional education. Mechanical and electrical engineering schools are giving credit for and often requiring a certain amount of practical shop experience or apprentice work. Civil engineers are doing likewise. Theological seminaries require students to occupy pulpits in their senior year. Agricultural colleges are requiring a certain amount of practical work on accredited farms, even though they themselves possess experimental farms and carry on farming operations.

The following conclusions may be accepted, then, with little fear of effective contradiction:

1. The forest ranger for some time, like the engineering foreman, will continue to be largely a practical field-trained man, and a somewhat locally field-trained man. For example, in some regions of the Southwest, national forest rangers administer more grazing business than forest business. They must

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Because of the long life of the woodland project it is important that the annual reports be as detailed as possible, all data being included. As the reports for a particular subject accumulate from year to year the teacher will find in them a wealth of information which may be drawn upon for both classroom instruction and project study. The teaching in fact can not function as it should until these technical data have been assembled and put into usable form.

In a forest section where silvicultural activities constitute the principal occupation of the inhabitants, as is true of certain of the national forest areas, it could happen that 50 or even 75 per cent of the vocational course in agriculture might be devoted to the subject of forestry. In fact it needs but a decision by the Federal board to make possible the establishment of silvicultural vocational schools, similar to the Waldbauschule of Germany. In the United States the policy has been to use college graduates in forestry for filling ranger positions in the Forest Service, yet it is generally admitted that the work of a ranger is vocational rather than professional in nature. The real difficulty lies in the absence of practice in the professional course, and it is in an endeavor to correct this deficiency that professional students are advised to accept ranger positions. While there are many so-called ranger schools in the country they all require a high-school diploma for entrance, thereby placing themselves in the semiprofessional class and making themselves ineligible to the benefit of the vocational education act.

If the ranger schools of the country are to comply with the requirements of the vocational education act, it will be necessary (1) to reach the vocational standing by eliminating the high-school diploma entrance requirement; (2) to offer preparation for useful employment (as a ranger, cruiser, woods foreman, forest superintendent, etc.) which is adapted to the needs of persons over the age of 14 years; and (3) to require supervised practice under field conditions.

In the inauguration of vocational education in forestry the problem of teacher training will be found to possess a significance similar to the place it occupied in vocational agriculture. Vocational education demands new teaching tools and materials; the traditional lecture method of instruction can not be used. Boys who require vocational education are "motor minded"; they learn best by doing. This means that teachers must be specially prepared to instruct vocational students. No doubt the requirements as to the training will be somewhat similar in forestry to those in agriculture. Under the Georgia State plan the vocational teacher in agriculture must have had two years of practical experience in farming since his fourteenth birthday, one year of which must have been continuous; he must have had technical training in agriculture equivalent to a four-year professional course; he must have had professional training in teaching and education; and he is required to have practical experience in teaching vocational agriculture. It is readily understood that the teacher training division carries a large share of the responsibility in making for the success of vocational education, since it is this division which recommends both the technical and professional subject to be required of the prospective teachers. Whether the teachers of vocational agriculture will give any time to woodland forestry will depend upon their own training, and this in turn upon the courses in forestry required for the prospective teachers under the State plan.

If the statement is true that the future crop of wood of the eastern United States will be produced by the farm woodlands of that region, is it not highly important that the teachers of vocational agriculture—the ideal builders of the coming generation of farmers—be given adequate training in forestry? Many of the men in charge of teacher training have had no training in forestry

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(*b*) Forestry:
Silviculture (seed collection, seeding, planting).
Mensuration—timber estimating, scaling, calculation of increment.
Tree identification.
Forest protection—fire, insects, fungi.
Wood identification—local species.
Logging and utilization of wood.
(*c*) Miscellaneous:
Bookkeeping.
First aid.
Game and fish.
Constables' or wardens' law.

These older field-trained men will generally have the training in packing and riding, ax and saw, camping, etc.

For the forward-looking vocational forest school, looking to the public schools (second year high school) for its recruits, the course will be more comprehensive in that it will contain more basic mathematics and science, as well as more elementary outdoor training.

FIRST YEAR.

First semester.

English: Composition and rhetoric.
Mathematics: Geometry (elementary algebra assumed to have been taken in high school).
Botany: A brief view of plant structures and processes.
Tree identification.
Elementary forestry (general survey).
Silviculture: Seed collection and storage on a practical basis.
Shop: Woodworking and machine-shop tools.

Second semester.

English: Theme and report writing.
Mathematics: Elementary trigonometry, compass surveying.
Wood identification and uses of wood.
Drawing.
Silviculture: Seeding and planting (four weeks' nursery and outplanting work).
Mensuration: Log scaling, timber estimating.
Motor trucks and gas engines.

Summer term.

Nursery practicums: Use of ax and saw in improvement cuttings.

SECOND YEAR.

First term.

Mathematics: Plane table surveying and topographic sketching; forest type mapping.
Forest protection: Field practice in fire fighting carried on throughout course on adjacent forest property; protection from fire, insects, and fungi.
Road and trail building: Bridges, cabins, telephone construction, fire towers.
Silviculture: Methods (simple).
Geology and soils (elementary).

Second term.

Forest law: Elementary business law.
Bookkeeping and use of forms.
Game and fish.
Forest recreation.
Ranger manuals (National Forest or State, or both).
Special regional features, as grazing business, camping, packing.
First aid.

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Summer term.

Wood utilization: Logging and milling in connection with commercial operation.

The above curriculum is mere outline. It is a little more theoretical than the previously-mentioned temporary ranger courses. Its graduates would start in as guard, assistant rangers, helpers, etc., and get practical field experience before being promoted to places of responsibility.

J. B. BERRY, *Chairman.*
E. A. ZIEGLER.
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R. S. MADDOX.

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SHOULD "PUBLIC RELATIONS" RECEIVE A PLACE IN THE PROFESSIONAL TRAINING OF FORESTERS?

By HERBERT A. SMITH,
Assistant Forester, United States Forest Service.

Throughout our program we have had before us the broad theme of what it is that we are trying to do when we undertake to make a forester. That is what we are bound to come back to, whether we are talking about entrance requirements or the length of the course or the subjects to be studied or specialization or meeting the demands of the industries or pleasing the men themselves.

The men themselves, as we have been told this morning, want a course that will let them begin to earn as soon as possible; and the industries which are ready to give them employment want them trained along specialized lines; and therefore we must, apparently, crowd pretty well out of the course those studies which are intended to give all-round development rather than preparation for specific classes of jobs. But, after all, must we? The spirit of youth is impatient, anxious to be done with preparing and to begin to do; and it is a wholesome spirit—for youth; but it is not necessarily wholesome for youth that it should altogether have its own way. Our professional schools have an obligation not merely to cater to the wishes of their clientele. If we are going to gauge our work on the basis of what the industries want, and so meet the desire of the bulk of forest-school students to get to the best-paying job with a minimum of expenditure of time and money, are we not in much the position of yellow journalism, which frankly undertakes to "give the public what it wants"? If we run our forest schools on this basis, we shall not prepare men for a career, for a lifetime of climbing the ladder; we shall prepare them for immediate jobs. The school that does that successfully will probably prosper greater, so far as numbers go; but the percentage of its graduates who eventually attain distinction will be unduly small.

It is important that a man should, in laying out the plan of his life, look far forward. He should prepare himself for middle age, for the period of fully ripened powers, for the true harvest time of his activity. You can not build high on thin foundations. The professional schools should recognize that their task is to give men the right start.

It is from this standpoint that I look at the question of preparing forestry students for what we have recently come to call, in the Forest Service, "public relations." The term designates for us, in the first place, a unit of organization. This unit conducts a group of specialized activities, having a common purpose. They are not merely activities conducted by specialists in the Washington and district offices; they are extended throughout the field organization to an increasing degree and with increasing emphasis on their necessity.

Take for example the forest supervisor. In the first years of the Forest Service our supervisors usually had to face a local public sentiment which was

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not merely indifferent but actually hostile. Naturally the tendency was to fight back more or less; confronted by antagonism, men of spirit naturally felt the necessity of holding up their end. After this stage, and as the spirit of hostility died out, came a period of pressure from the Washington office for better standards of work. The forest supervisor had to be a combination of a good technical man and a good business man. The demands on him were constantly greater than he saw his way to meet, and compelled him to turn all his attention on the forest. A third stage came strikingly into view during the war. The forest officers had gradually gained a position in local esteem which caused them to be turned to as community leaders in all kinds of public activities. By and large, the forest supervisor has come to be not merely a Federal official, not merely a capable forester and business agent, but a public man. We are now entering on a fourth stage, in which the forest officer combines with the public relations viewpoint the assumption of definite and specialized public relations activities.

It was primarily due to our fire problem that we moved forward to this stage. Three or four years ago our District 5 office came to the conclusion that altogether too much money was spent in fighting fires which should never have started. A remedy was sought along the interrelated lines of law enforcement and education, each helping out the other. The educational task consisted of finding out and utilizing as many agencies as possible that would affect the ways of thinking of the public with regard to forest fires. Among these are the newspapers, the schools, the "movies," and public talks by local forest officers. The results had much to do with bringing us to our present recognition of public relations.

The question whether the men who come into the Forest Service from the forest schools should receive in connection with their technical training some specific preparation for work of this character can not be answered as an isolated question. It must be coordinated with the whole broad question of the type of man that the schools should seek to turn out, and the relative value of the different subjects needing to be taught, and the time that each should have given it. The dean of the school of journalism in the University of Montana instructs the forest school students in newspaper work. The reason, he told me, is because a forest officer who does not know how to furnish the press with the kind of information that it wants, who does not understand the function of the press in our national life and does not appreciate the importance of establishing good relations with his local newspaper editors, lacks proper equipment for his work. That is significant, but not to my mind conclusive. For the question is not what is important, but what is most important.

There has been an extraordinary broadening of the conception of the field of the engineer. The profession no longer concerns itself merely with mechanical and physical forces and problems, with machines and structures and energy. It deals with all that enters into production, including the human element—with questions of labor, of public welfare, of Government. Unless we are to consider all this as without logical basis, there is need for recognizing that in the field of engineering we now have an entirely new set of concepts, and a necessity for a corresponding readjustment of education for the work of engineers. It must be broadened and humanized.

An undergraduate four-year course in forestry will closely approximate tha of the engineering schools, if both are worked out along the right lines. I has been generally agreed here that in such a course for foresters the first tw years should be the period of foundation laying, with emphasis on a broad

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education rather than specialization. The aim is to give us a man of such breadth that he may be able to develop his full power in time, to grow as he goes on; to become a man of all-round capacity, of poise, sure judgment, of leadership and mastery. It will not do in planning for this to draw up a schedule of subjects and stop there. The important matter is not what subject you teach, but what your object is and what results you get. The place of English in the first two years' work has been spoken of this morning. To learn to think clearly and write accurately is certainly of great importance; but it does not follow that the burden of bringing this to pass should be laid solely on the English department. In a preparatory school I got my best training in English from my teacher of Latin. On the other hand, if we are considering how to develop an all-round man of power in his period of full maturity, possibly the English is needed in the course for other purposes. English studies must be coordinated with the study of other languages, of history, of science, of every part of the course, in short; and its definite educational object prescribed for it. When that has been done, call in the English department of the university, tell them what you want, and ask them if they can deliver the goods.

We can not settle this matter by my talking about it here for half an hour, or by everybody talking about it for two days. My hope is that this conference will proceed to create a committee the purpose of which shall be to make a study of the place of cultural education in the forestry course, the subjects most suitable to serve the purpose sought, and the objects to be aimed at in each case. This whole question is so broad, so complex, and so unformed at the present time that a council engaged in its study will have before it a task of a magnitude almost as great as its solution is urgent.

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REPORT OF THE COMMITTEE ON FORESTRY AS A PART OF EXTENSION COURSES IN COLLEGES AND UNIVERSITIES.

EXTENSION WORK IN FORESTRY.

Object.—To supplement the more formal instruction of the classroom and reach those who can not afford the time or money to attend regular courses.

The need.—In this way the salient points in forestry can be set before the small woodlot owner, the wood user, and the person whose interest has been stimulated to the point where he wishes to acquire a systematic view of the fields which are susceptible of presentation by extension methods. To make this more concrete there would be included the woodland owner whose holdings were too limited to justify the employment of an expert and who must, therefore, he his own forester; the manufacturer of wood in some form who wished accurate information about his raw material; and the general reader who wished to systematize his information.

Methods.—Extension work may be accomplished by (1) reading courses, (2) talks; (3) demonstrations; (4) permanent projects.

Reading courses can be developed in the following subjects:

1. General forestry.
2. Dendrology (including wood uses and identification).
3. Estimating and scaling.
4. Woodlot management (including protection, utilization, silviculture, and regulation).
5. Lumber grading.
6. Sawmill practice.
7. Kiln drying.
8. Wood preservation.
9. Economic aspects of the lumber industry.

The aim should be to cover well a few well-chosen phases of the subject. The "job sheet" method, as employed in the intensive training courses of the Army, may well serve as a model. The textbook should be carefully selected and may in some cases have to be specially prepared. Written reports should always be required. These should be carefully reviewed, suggestions made as to wrong or doubtful points and graded.

Talks or lectures should be concise and forceful appeals for action along definite lines. To be effective they must first clear the ground of obstacles, real and imagined, and then bring to bear upon the will of the audience such a flood of stimuli that their inherent inertia will be overcome. Merely to convey information is not enough. The audience must be moved to use the knowledge presented.

Talks may well be illustrated where the illustrations reenforce the argument. Merely showing pretty pictures is a waste of time.

Demonstrations are the natural result of the failure of talks to produce large results. Showing a man how to do a thing is much more effective than telling him how to do it. Hence, talks should, if possible, always be

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followed up by concrete, living illustrations. This is particularly the case in forestry. A demonstration talks all the time.

Projects are in turn a higher development than isolated demonstrations. In the former a carefully thought-out plan of action is followed up until results are secured. For example, thinning might be demonstrated in a single woodlot of pure, evenaged composition, but a thinning project covering all the phases of thinning in a certain type would be much more effective. It would include not only marking for thinning, but actually making the cutting and marketing the product.

SUMMARY OF RECOMMENDATIONS.

In view of the need of making extensive work in forestry more effective, it is recommended—

1. That all agricultural colleges and agricultural high schools be urged to give thorough courses in forestry to the end that woodland owners may be better prepared to care for their holdings, that the general public may better understand our problems, and in particular, that county agents and others charged with rural leadership may appreciate the important rôle of the forest in our national economy. At the present time rural leadership is almost wholly in the hands of tillage land experts who think the land should only be used for two purposes, cultivation or pasture.

2. Every woodland State should have at least one extension specialist to advise with the county agents. Ultimately there should be a forester in each wooded county.

3. A special committee of this conference or the Society of American Foresters should be appointed to—(*a*) outline reading courses; (*b*) secure a wider hearing in rural leadership circles for forestry; (*c*) report progress annually in the Journal of Forestry.

O. M. Butler,
A. K. Chittenden,
E. O. Siecke,
K. W. Woodward, *chairman*.

DISCUSSION.

Prof. Woodward said that he was impressed by the fact that certain fundamental ideas have not yet been sufficiently impressed upon the general public. The average man does not realize that wood is a necessity, and further that it is a comparatively restricted crop and that the supply is limited. The question is how to create a recognition of the facts that will constitute a basis for action.

Mr. T. S. Woolsey, jr., thought that to get forestry understood by the public generally we must go deeper and begin in the schools. In France forestry is understood much better than it is here. They have reached the conclusion that to have it understood by all the citizens, the study of forestry must start in the schools. Can we not profit by their example?

The possibility of forwarding forestry through the agency of the farm bureau was discussed by several speakers, who all agreed that in this way points of contact could be established with the woodland owner and the wood user better perhaps than in any other way. But it requires trained men to do this work. What is needed is personal contact by the right sort of man, working in conjunction with the county agent, and backed in his work by the culminative effect of rightly directed publicity. It seemed to be the consensus of opinion that in many States the farm bureau organization, working in cooperation with the State college, and preferably having a forester on the staff, could accomplish more in this way than if the extension work were to be undertaken by the State forester, whose attention is more likely to be centered on administrative and protective duties. An alternative plan that has promise is the method of appointing foresters in charge of local districts.

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REPORT OF THE COMMITTEE ON THE CHARACTER AND EXTENT OF RESEARCH BY SCHOOLS OF FORESTRY AND DEPARTMENTS OF FORESTRY IN COLLEGES AND UNIVERSITIES.

The agencies engaged in research contributory to forestry have recently been clearly defined by John C. Merriam,[1] of the National Research Council. His classification is as follows: (1) Research of practical application in engineering laboratories; (2) governmental bureaus and laboratories; (3) research foundations; (4) museums and allied institutions; (5) educational institutions.

In this collective development of research, schools and departments of forestry should bear a substantial part. Where the scope of the curriculum and the extent of equipment will permit, forest schools are especially fitted for this kind of work. Their administration is permanent, comparatively unchanging, and favorable to the necessary initiative and freedom in investigators. Moreover, the training of professional foresters, particularly in postgraduate grades, will profit by the inclusion of opportunity for research, both as an educational influence and a means to specialization.

It is important, however, to correlate the functions of the forest schools with those of the other agencies in the same or similar fields, particularly the Forest Service. The Forest Service is probably best qualified to undertake problems having a general or interstate bearing, while the schools are often better fitted to solve questions of a local or comparatively specific nature.

Fundamental problems, such as those dealing with the laws of growth, are best handled where the qualified men and a favorable directing policy exist. This combination may be found either in a Federal bureau or in educational institutions. The development of general science indicates that universities on the whole are the more favorable places for successful research.[2] Exact division of the field, however, is not possible or wise.

To develop the necessary correlation of work, both exchange of information on projects proposed or under way and actual cooperation are desirable. The basis of cooperation may well include the following items: Agreement upon a particular project and the working plan for carrying it out; control of execution; division of financial responsibility; and understanding as to rights and manner of publication.

It should be the function of some central body such as the Forest Service or the National Research Council to advise and consult frequently with the schools so as to avoid duplication and with the definite purpose of strengthening the hands of competent men who are working under difficulties. Such action would

[1] The Function of Educational Institutions in Development of Research. John C. Merriam. Reprint from University of California Chronicle, April, 1920.

[2] Mr. E. H. Clapp of the committee, desires it to be recorded that his experience "leads to the belief that, other things equal, most favorable conditions for research permit investigators to devote their entire time to it, and that investigators in any institution where this is not possible labor under a corresponding handicap."

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help to stimulate investigative work in general and make for unity in securing legislation. Any further attempt to standardize forest research by division of the field would be fruitless and inexpedient.

Respectfully submitted.

R. T. FISHER, *Chairman.*
R. C. HAWLEY.
J. S. ILLICK.
J. H. FOSTER.
E. H. CLAPP.

DISCUSSION.

The discussion developed the idea that in this country research in forestry is really only just beginning, and that now that the machinery for carrying on the work of education in forestry is coming to be perfected, an important opportunity for the forest schools lies in fostering research. Various opinions exist as to how research in forestry should be divided. One argument is for the Federal Government to investigate National problems; the State, State problems; and the schools, local problems. Opposed to this is the method commonly followed in other lines of scientific research, where problems of fundamental interest are considered to be quite as much the function of the colleges as of the Government.

The concensus of opinion of the conference appeared to be that as research in forestry is so comprehensive in its scope, it would be better not to attempt an arbitrary division of the field, but rather to encourage in every way possible all the agencies prepared to engage in it. In the last analysis it is the investigator that counts; the man rather than the agency through which he works. The important point is that research is fostered by a congenial atmosphere. Such surroundings are more likely to be found at educational institutions than under Government bureaus, even though the Government may have better facilities for providing physical equipment. In the course of time the universities will get the money so that investigators may have equipment and time for their studies and be able to conduct them in an unhampered way.

The opinion was expressed that a limited amount of teaching, particularly of advanced students, was in many cases an advantage rather than a detriment to the investigator, particularly where as in a school of applied science the subjects being studied can be made to link up with the problems of industry. From another standpoint the study of such problems is advantageous in that it may lead to financial support being given to research work by commercial interests which, so long as the grants are made without improper restrictions, is an effective aid in the advancement of knowledge.

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RECOMMENDATIONS OF THE CONFERENCE.

Throughout the meeting the sentiment was repeatedly expressed that the reports submitted were but starting points for the problems under consideration. Because of this feeling, and also in view of the report of the committee on permanent organization, the conference at its final session expressed its belief that the purpose for which the New Haven meeting was called would best be served were the work there begun continued by a permanent organization. It was the sense of the conference that the most satisfactory agency through which to accomplish this was the Society of American Foresters. Accordingly, the conference unanimously adopted the following:

RESOLUTION.

Resolved, That this conference recommends to the Society of American Foresters (1) that it appoint, through its president, a committee on forest education to consider all suggestions made to this conference, whether in formal reports or otherwise, together with such other phases of forest education as it deems advisable; (2) that this committee consist of (*a*) the chairman of this conference, as chairman, (*b*) the chairmen of the eight committees reporting to this conference in those cases where they were senior members of the society, and in cases where they are not, of some other member of the committee who is a senior member of the society, and (*c*) of three other members; (3) that this committee be authorized to appoint subcommittees, which may include persons to be appointed by the chairman who are not and do not by virtue of such appointment become members of the main committee; and (4) that it report the results of its investigations, with recommendations, to the society from time to time.

At the annual meeting of the Society of American Foresters, held in New York City on December 19, 1920, the above resolution was presented and adopted. Shortly thereafter the president of the society appointed as the committee on forestry education the following persons:

J. W. Toumey, New Haven, Conn., chairman.
R. S. Hosmer, Ithaca, N. Y.
H. H. Chapman, New Haven, Conn.
F. F. Moon, Syracuse, N. Y.
S. T. Dana, Washington, D. C.
E. A. Ziegler, Mont Alto, Pa.
E. G. Cheyney, St. Anthonys Park, Minn.
K. W. Woodward, Durham, N. H.
R. T. Fisher, Cambridge, Mass.
H. P. Baker, New York, N. Y.
P. S. Lovejoy, Ann Arbor, Mich.
R. D. Forbes, New Orleans, La.

To cover the wide field and to endeavor to advance forestry education in this country in the largest measure, the main committee has been organized into 10 subcommittees to study and report upon specific topics within the limits of the general committee's field of activity. These reports will be made to the Society of American Foresters and doubtless in due course will be made public through the official organ of the society, The Journal of Forestry.

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APPENDIX.

LIST OF COMMITTEES OF SECOND NATIONAL CONFERENCE ON EDUCATION IN FORESTRY.

New Haven, Conn., December 17 and 18, 1920.

OFFICERS OF THE CONFERENCE.

Chairman: Dean James W. Toumey, Yale School of Forestry.
Secretary: Mr. T. S. Woolsey, jr., New Haven, Conn.

COMMITTEES APPOINTED BY DEAN TOUMEY TO REPORT AT THE CONFERENCE.

Committee on undergraduate course:
Dean R. S. Hosmer, Cornell University, chairman.
Professor J. M. Briscoe, University of Maine.
Professor A. K. Chittenden, Michigan Agricultural College.
Professor R. R. Fenska, University of Montana.
Professor Donald Bruce, University of California.
Mr. J. S. Holmes, State Forester of North Carolina.

Committee on course leading to the degree of Master of Forestry:
Professor H. H. Chapman, Yale University, chairman.
Dean Filibert Roth, University of Michigan.
Professor S. N. Spring, Cornell University.
Professor C. D. Howe, University of Toronto.
Mr. P. T. Coolidge, Consulting Forester, Bangor, Me.

Committee on specialization:
Dean F. F. Moon, New York State College of Forestry, chairman.
Professor R. C. Bryant, Yale University.
Professor J. A. Ferguson, State College of Pennsylvania.
Mr. W. B. Hastings, State Forester of Vermont.

Committee on training of specialists in forest products:
Mr. S. T. Dana, U. S. Forest Service, chairman.
Dean R. S. Hosmer, Cornell University.
Dean H. Winkenwerder, University of Washington.
Dr. W. K. Hatt, Purdue University.
Dr. C. E. Paul, National Lumber Manufacturers' Association.

Committee on vocational training in forestry:
Professor J. B. Berry, Meadville, Pa., chairman.
Professor E. A. Ziegler, Pennsylvania State Forest Academy.
Dean H. Winkenwerder, University of Washington.
Mr. R. S. Maddox, State Forester of Tennessee.

Committee on forestry in cultural and general educational discipline:
Dr. C. D. Jarvis, Bureau of Education, Washington, D. C., chairman.
Dr. John Ise, University of Kansas.
Professor E. G. Cheyney, University of Minnesota.
Mr. H. O. Cook, Forester, Conservation Commission of Massachusetts.
Mr. R. D. Forbes, State Forester of Louisiana.

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Committee on extension courses in forestry:
Professor K. W. Woodward, New Hampshire Agricultural College, chairman.
Professor A. K. Chittenden, Michigan Agricultural College.
Mr. E. O. Siecke, State Forester of Texas.
Mr. O. M. Butler, Forest Products Laboratory, Madison, Wis.

Committee on research in forestry:
Professor R. T. Fisher, Harvard University, chairman.
Professor J. S. Illick, Department of Forestry of Pennsylvania.
Professor R. C. Hawley, Yale University.
Mr. J. H. Foster, State Forester of New Hampshire.
Mr. E. H. Clapp, U. S. Forest Service.

COMMITTEES APPOINTED BY THE CONFERENCE.

Committee on permanent organization: R. C. Bryant (chairman), J. A. Ferguson, J. M. Briscoe.

Committee on resolutions: H. H. Chapman (chairman), F. F. Hoon, S. T. Dana.

Committee to edit and publish the proceedings: R. S. Hosmer (chairman), E. A. Ziegler, K. W. Woodward.

FOREST SCHOOLS HAVING 4-YEAR CURRICULA.

Economy in publication demanded the omitting of the detailed courses of study for 20 American forest schools offering courses covering a four-year period. Certain of the schools offer only a four-year curriculum; others also give graduate work, leading after one additional year to the master's degree. In the following list the schools offering graduate work are indicated by an asterisk.

Interested persons may secure the curricula of the schools from their respective catalogs in greater detail than could be here published. The similarity of many of the courses would have made of their inclusion unnecessary repetition.

The following list shows the principal forest schools giving 4-year courses or more and granting a forestry degree:

Bates College, Lewistown, Me.
*Universtiy of California, Berkeley, Calif.
*Colorado College,[1] Colorado Springs, Colo.
Colorado Agricultural College, Boulder, Colo.
*Cornell University, department of forestry, New York State College of Agriculture, Ithaca, N. Y.
Georgia State College of Agriculture,[1] Athens, Ga.
*University of Idaho,[1] Moscow, Idaho.
*Iowa State College of Agriculture, Ames, Iowa.
University of Maine, Orono, Me.
*Michigan Agricultural College, Lansing, Mich.
*University of Michigan, Ann Arbor, Mich.
*University of Minnesota, St. Paul, Minn.
University of Montana,[1] Missoula, Mont.
Univerisity of Oregon, Eugene, Oreg.
Pennsylvania State College, State College, Pa.
Pennsylvania State Forest Academy, Mont Alto, Pa.
*Syracuse University, New York State College of Forestry,[1] Syracuse, N. Y.
*University of Toronto, Toronto, Canada.
University of Washington,[1] Seattle, Wash.
*Yale University, New Haven, Conn.

[1] This school also gives a short course for forest rangers.

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DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

BULLETIN, 1921, No. 45

SCHOOL GROUNDS AND PLAY

By

HENRY S. CURTIS

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SCHOOL GROUNDS AND PLAY.

INTRODUCTION.

There are many people of middle age in America still who do not believe in play. They grew up without playgrounds themselves, and they do not realize how greatly conditions have changed during the intervening years. When I was a boy in southern Michigan the school session in our country community was only four months a year. Under these conditions the school may rightfully give its entire energy to scholastic subjects, and trust to the children finding time for play and industrial training during outside hours. But as the school takes over more and more of the child's time and energy, and grows from a 4-month term to a 9 or 10 month term, with a tendency toward a yet longer year, and a yet longer day, it becomes necessary that the school shall make provision for all sides of the child's nature.

There are many men of the old school who believe that work is the proper method of developing manly qualities in boys. They still proclaim their theory, forgetting that our child labor laws do not allow boys or girls to work before the age of 14 or 16. Work on the farm and in many other lines of industry had a great physical and practical value; but farm boys have mostly dropped farm work, except a little during the vacations. There is almost nothing for city boys to do. Some girls sweep the floors, make the beds, and wash the dishes, but they do not grow strong from washing dishes.

It is impossible to develop a high degree of motor skill unless the muscles and coordinations are trained during the period of growth. The best time for physical training is the period of the elementary school. During this time there is little physical work; probably not more than 5 per cent of the pupils have regular access to a gymnasium, and their chief source of physical development is play and athletics.

The war revealed that about one-third of our young men from 21 to 31 were unfit for military service, and the War Department officials tell us that at least half of this physical unfitness would have been overcome if these young people had had proper physical training during their youth. We did not examine our young women, but no one thinks that we should have found these young women in a better physical condition than the young men.

When the young men who were accepted were sent to the training camps, more than half of the time was spent in putting them into physical condition. From this came first a movement for universal military service, which has changed during the last two years into a movement for universal physical training.

The war has demonstrated the great value of athletic sports in developing initiative, courage, resourcefulness, quickness of thought in time of danger, and all the qualities which make a capable soldier. Athletics was a great safeguard in keeping the men from temptations, offered the greatest relief after the strain of the trenches, and enabled them to come back after a nerve-racking period in the front line. It developed morale. Even with inadequate training, the American soldier was one of the most efficient fighting men in Europe, and he owed

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his efficiency largely to baseball and football. If the battle of Waterloo was won on the football fields of Eton, then Chateau-Thierry and the Argonne were won no less on the baseball fields of America.

Every activity of civil life was carried on in the Army, and there were always 5 to 10 men behind the line to every man in the line, yet the Army rejected one-third of our young men from military service. It rejected them because it demanded higher efficiency than civil life has ever demanded, and because it demanded that the men in the Army should have resistance against disease and be able to recover from wounds. But it is also desirable that men should be efficient in civil life; that they should be able to recover from wounds and have resistance against disease. The handicaps on account of which the men were rejected from the military service are no less handicaps in civil life than they were in the Army.

At the beginning of the war we were spending 10 cents per capita on the recreation of children, but during the war we spent nearly $50 per capita for the recreation of our soldiers. At the beginning of the war the venereal rate in the Army was 11 per cent, but during the war, in spite of adverse conditions in France and in military camps in general, it ran down to 4½ per cent. There is every reason for thinking that similar measures in time of peace with civil populations would be yet more effective.

OUR NEW STATE LAWS.

Since the war there has been a new emphasis on organized games and athletics throughout the world, and in some countries on gymnastics also. In the United States, since 1916, 28 States have passed laws putting organized games and athletics into the program of the public schools. Such bills are now pending in the legislatures of several States.

These State laws are much alike. Most of them have resulted from a meeting of physical trainers called together by the United States Commissioner of Education, Dr. P. P. Claxton, at the meeting of the National Education Association two years ago, at which the National Physical Educational Service was organized, with an office in Washington in charge of E. Dana Caukins, and supported by the Playground and Recreation Association of America. In general outline the more recent laws are about as follows:

There is to be a physical examination of all children each year with some suggestion for the removal of the physical defects discovered, usually by some follow-up system by the school nurse. In the State of Iowa children may be sent to the State university hospital and be maintained there at State expense for necessary operations.

These examinations show that there has been a great increase in malnutrition during the war, and that about one-third of the children are undernourished; that there are a great many with adenoids or enlarged tonsils, which require an operation, many who need glasses, and a large majority who have defective teeth.

Most cases of diphtheria, whooping cough, typhoid fever, and measles are contracted at school. The doctor is not at the school enough to discover these cases in time to prevent the exposure of other children. In some of the State laws it is provided that there shall be an inspection of all children each morning by the teacher.

In some States, as New York, a mark on posture is given on the monthly report card.

There is a two-minute drill at the end of each recitation period for relief from sitting still.

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Health and the principles of hygiene are to be taught to all children, and certain periods are provided for gymnastics and games. About two-thirds of the time is to be given to organized games out of doors during the pleasant weather.

The following is the present requirement in the State of New York:

1. Physical training A: Correlation with school medical inspection, daily inspection of every class by the regular class teacher.
2. Physical training B: Relief drills of at least two minutes' duration in connection with each class period, or at least four times every school day, under the direction of the regular class teacher.
3. Physical training C: Talks on hygiene, two 10-minute or 15-minute periods a week under the regular class teacher or a teacher appointed for this special work.
4. Physical training D: Games, athletics, gymnastics, group dances, etc.
   (*a*) Supervised requirement: A minimum of two hours per week under supervision or direction of school officials. May be covered in recess periods, in the regular schedule, or after the other work of the day is completed.
   (*b*) Additional requirement: Three hours per week, supervised or unsupervised.

The minimum time demanded in most States is 20 minutes in excess of regular recesses and noons, but in Kentucky, Georgia, and New Jersey it is 30 minutes, while in New York it is nominally an hour.

In those States where there is an appropriation and provision for a State director of physical training, as there is in New Jersey, Maryland, Michigan, New York, and California, the law has been effective. A syllabus of physical training is issued from the State department of physical education, and the physical director holds conferences with physical trainers over the State to get this program under way. Courses in games for all students and special courses for physical trainers are being started at the State normal schools. Play is being introduced into the county teachers' institutes. In the State of New Jersey there has been organized also a State association of physical trainers and a State interscholastic athletic league. In some States where there is no appropriation and no State director, as in Delaware, Indiana, and Illinois, the law apparently has had little effect.

New conditions in the colleges.—During the war the Students' Army Training Corps was organized in most of the larger colleges, and mass athletics and other outdoor sports were introduced. There has been an enormous increase in outdoor athletics in nearly all of our colleges since the war, so that in the fall of 1920 out of 640 men in the freshman class at Harvard only 16 were doing formal work in the gymnasium, while all the rest were engaged in some kind of athletics. Out of some 675 at Yale only 70 were taking work in the gymnasium, while all the rest were engaged in athletics. Columbia University now requires all its freshmen and sophomores to take their exercise in the form of athletics out of doors during the fall and spring. Baseball, basket ball, volley ball, hockey, tennis, and football are required of all of the men as a part of their regular course. Every man must learn to swim and take part in at least two forms of field athletics. These are required both for the sake of exercise and because they are believed to be a part of a general education. The University of Pennsylvania has been a pioneer in requiring athletics of its student body. Northwestern has made athletics compulsory during the last year, while West Point, which has in the past been largely devoted to gymnastics from a military point of view, now requires mass athletics of all students for four periods a week. The same tendency has shown itself in the small universities and colleges wherever they have had the facilities.

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THE MUNICIPAL PLAYGROUND.

The municipal playground can not care for the play of school children adequately. The children do not know each other well enough, and they are not friendly enough for play of the right sort. Among the essential conditions of successful play are that the children shall be of nearly the same age, of the same sex, and that the same children should play together each day. This is impossible on the municipal playground as now organized. During the school year, if the children are to go to the municipal playground, they must make separate trips home and to the ground. This extra effort is sufficient to prevent many from going. The school year is being constantly lengthened until there is a possibility of a 12-months term and a 6-hour day. With this arrangement it will be practically impossible for the children to use the municipal playgrounds except at night. Play is one of the greatest educational forces of childhood, and to turn it over to any organization which looks upon it merely as amusement is often to lose its chief educational values. The school board has the machinery for providing educators to organize work with children, while park boards usually do not have this machinery, and with them playground positions are more likely to be filled with political retainers and others who are unsuited to the work. In all cities that have adequate school grounds, or where the school board can administer the municipal playgrounds, the play of school children should be supervised by the schools. Play is to-day a larger school problem than it ever was before.

AREA OF THE SCHOOL GROUND.

Many of our old schools were built without playgrounds, and the buildings occupy almost their entire site. Our new activities are demanding more space. The rules as passed by the State board of education of Delaware last year regarding the size for school sites are as follows: "For a one-room school there shall be not less than 2 acres; for a two-room school not lees than 3 acres; for a three and a four room school not less than 4 acres."

Many of our older city schools have been largely surrounded by residences and business buildings, until little space in the immediate neighborhood is available. There has been a good deal of discussion of the London requirement of 30 square feet of playground for each child, but this is an absurdly small amount, giving each child practically only a 5-foot square to play in. There have been a number of other standards proposed, running up to 200 square feet per child, but no standard built upon the number of children at the school has much significance, for the reason that in outlying sections where schools are built with few rooms land is probably cheap, and grounds can be secured which may accommodate also the overflow activities from other schools. A three-room school in the suburbs with adequate play space soon grows into a 15 or 20 room school, with very inadequate play space. The only sensible rule is that 6 or 7 acres should be secured for every school if possible, and the minimum that should be allowed by law for any new school, except under very unusual conditions, should be one city block. If a large outlying site has been purchased, and the city does not grow in that direction, a part of it may be turned into a park for that section, or an athletic ground, or gardens, or tennis courts. There are dozens of uses to which this ground can be advantageously put, and it is probable if the law permits it, that after having kept the ground for a dozen years without taxes, 10 per cent of it might be sold for enough to pay for the entire site.

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Enlarging grounds.—Many of our schools have been built without playgrounds, and the sensible thing in many cases is to abandon these old sites and select new and more adequate ones, for in these old buildings without playgrounds there are practically no gymnasiums, auditoriums, or shops; no rooms for domestic economy, manual training, art, or music, or any of the things which constitute a modern school.

The survey committee of Delaware, of which Prof. Strayer, of Columbia, was chairman, scoring the school buildings of Delaware outside of Wilmington, found that only 4 or 5 per cent scored above 500 on 1,000, and recommended that all of these buildings should be abandoned. Probably the great majority of buildings that have been constructed without playgrounds in the United States would score less than 500 points on 1,000 on the scale adopted by the survey committee.

Most of these sites are in sections where land value is high, and may often be sold for enough to acquire a fine site farther out. Where this can not be done, the school board should follow a policy of enlarging its school grounds by the purchase of adjacent grounds or buildings, whenever these can be secured at a reasonable price. The city of Houston, Tex., a few years ago issued bonds for $500,000 to enlarge the grounds of its old schools. Berkeley and Oakland, Calif., have also done this on a large scale.

Often it is possible to buy land cheaply in the interior of the block by cutting off 50 to 100 feet from the back ends of the house lots. In Salt Lake City, where the blocks are very large, many of the schools are thus securing playgrounds nearly 3 acres in size.

Detached playgrounds.—It is not absolutely necessary that the playground should be in the same block with the school. There are many cases where, though it is impossible to get more land in the same block without paying a prohibitive price, it may be possible to get ground across the way much more cheaply. Ground of this sort may be quite as well adapted for tennis, volley ball, basket ball, and baseball as is the school ground. In fact, it may be an advantage to have these games away from the school building and the smaller children.

Many London schools make provision for out-of-town grounds, where they can not secure them near the school, and then arrange for a cheap fare with the tramcars that carry children back and forth at hours when the bulk of the traffic is going in the opposite direction at half price.

The school park.—Jacob Reis, in New York, for many years advocated that there should be a small park in connection with every school ground. Gary, Ind., has made a beginning of this at the Emerson and Froebel Schools. Such provision would be desirable in many locations. The new high-school in Flint, Mich.. has 43 acres of ground and probably 30 acres of woodland.

Leveling.—All college athletic fields and tennis courts are made almost level. No other surface is suited to play upon. Inequalities are always likely to result in sprains. Few of our school grounds have ever been leveled; yet this is the fundamental condition for successful play on from half to two-thirds of them. They must be graded so that the water will run off without washing; stones must be dug out, projecting roots cut off, and inequalities of the ground filled in until the ground is nearly as smooth as a tennis court or a regular baseball diamond for professional baseball. If the ground is a hillside, this can only be done by putting it into terraces, which is expensive but unavoidable.

Seeding the ground.—The ideal surface for most games is grass, and for all rural schools and the larger city sites it should be possible to keep grass on a part of the ground at least.

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The grounds should first be carefully leveled, enriched, and seeded down. In the South the best grass is Bermuda,[1] while in the North some form of June grass, red top, or creeping bent serve best. It is almost impossible to kill out Bermuda grass; it will stand the wear of very intensive play.

Surfacing.—In our larger cities where the grounds are small and the number of children is great, no kind of grass will stand the wear. Many kinds of surface have been used, all of which are more or less unsatisfactory, but some of which are better than others. Of all surfaces next to mud, probably brick is the worst, then comes cement, and then coarse cinders or broken stone. The best surfaces are ground or crushed cinders, torpedo gravel, or the finest of crushed stone. School boards who are putting in brick, or coarse cinders, or broken stone may well consider that no adult would play on such a surface for a day, that to run on brick or concrete is a constant jar to the nervous system, that the coarse pebbles and cinders turn the ankles; that they will cut out a baseball or a volley ball in a day; and that a fall upon them probably means a bad cut and a hole through the trousers. They wear out nearly enough shoes, clothes, and play equipment every year to pay for proper surfacing.

Torpedo gravel is a fine water-washed gravel, a little smaller than a double-B shot. It is nearly round and is put on to a depth of about one-half inch. If the ground is well graded and underdrained, or is of a loamy texture, this makes a fairly satisfactory surface. Mr. Champlin, recreation secretary for Philadelphia, gives the following specifications for the surfacing used on the grounds of Philadelphia:

The entire plat (with such exceptions as may be required in each particular case) to be graded to a subgrade or 10 inches below the finished grade as shown on the plans.

This surface so made is to be carefully, though not accurately, leveled, and is then to be compacted by rolling with a steam roller of not less than 5 tons in weight.

All soil or waste material resulting from this grading is to be taken away and disposed of.

Sufficient hard-coal cinders should be spread over this surface so that after rolling with a steam roller of not less than 5 tons in weight there will be a thickness of 7 inches.

The cinders must be thoroughly wet before and during rolling, and the rolling may be done in one layer.

Stone screenings should be placed on top of the cinders to a sufficient depth so that after rolling with a steam roller of not less than 5 tons in weight and bringing the surface to the grades given by the district surveyor, there will be a thickness of not less than 3 inches of stone screenings. The stone screenings must be thoroughly wet before and during rolling, and the rolling may be done in one layer.

These specifications when properly followed will produce a surface that will not become muddy or restrict play, even after the most severe rainstorm, for more than a very short period, up to one hour; for if the area is graded to direct the water to sewer outlets by very gradual grades, the excess water is gone immediately after the storm and the composition of the surface permits the percolation of enough water to saturate the area so as to prevent dust for a considerable time, depending, of course, on the weather.

In Philadelphia playgrounds have the top surfaced with the finest of stone screenings. Until recently they have been treating this also with gluten to keep down the dust, but this has of late been discontinued on account of the expense. In the new schools of Detroit they use 2 inches of cinders, surfaced with 2 inches of very finely crushed lime stone.

None of the surfaces mentioned will be found entirely satisfactory. The surface used in Philadelphia is too hard and also more or less dusty. Cinders

[1] In the Playground for February, 1921. See specifications for grassing a golf course. These will answer equally well for a playground.

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are not pleasant to look at and absorb the heat in summer. It is probable that we shall ultimately have to manufacture a surface before we shall get one which meets all conditions. A surface of about 2 inches of India rubber, colored green or light brown, would make the ideal surface; and it may be that some of the rubber substitutes will some time be cheap enough so that this can be done, or it is possible that some form of resilient asphalt properly colored may be produced which will be satisfactory.

Roof and basement playgrounds.—In places like New York City, where ground is often worth a million dollars or more per acre and the site on which a building is erected may cost more than the building, it is not to be expected that a large space can be secured for a playground. In New York this situation is met in the newer buildings by a fairly light playground which occupied the entire space of the first floor of the building and by putting a second playground on the roof, so that the school has a playground area equal to twice the site on which it is built and, in addition, such small exterior courts as are necessary to give the building the proper light and protection from the sounds and smells of the neighborhood. Such provision should be insisted upon for new schools where adequate outdoor space can not be secured.

Keeping in condition.—In many school systems there is no provision for keeping the school yard in condition. Few school yards look really tidy. Projecting roots, stones, brickbats, and heaps of ashes should be removed. The board of education should provide for a monthly clean-up, and the janitor or a sanitary squad at the school should constantly see that the ground is in condition.

Location of the school building.—The school architect desires to put the building where it will be most conspicuous and sightly. It is a better advertisement for him if he can have an acre of lawn with flowers and shrubbery in front; but if the school board buys 2 or 3 acres and puts the building in the center the pupils will not get much use of the ground. The building should be at the end or side of the grounds, not far from the street. The part in front may then be grassed and flowers and shrubbery may be used.

Planning the school ground.—To secure efficient use of the school ground it must be level and planned as carefully as the building itself. There are many school grounds where the older children have put up a basket-ball court in the middle of a half acre of ground, thus using ten times the space needed and keeping all other playing groups from using the ground. The playgrounds for little children should be located near the building. Equipment should be put at the side, leaving the general play space open, and school gardens should be at the back, away from active games. Running tracks, jumping pit, and equipment for athletics should be along the side.

Fences.—It has been the custom in parts of the East to provide an outer fence, and ofttimes a fence separating the girls from the boys, while in the West and in general in newer schools there have been no fences. There are advantages in having a fence. It sets the school ground off by itself and gives it individuality. Conduct will always be a little better on a fenced ground. It is easier to control. There is less danger of the children rushing into the streets in front of automobiles. There is less danger also from stray dogs and runaway horses, and there is very much less annoyance from the use of the ground at night. But schools with the smaller grounds can not afford the space, and must use the sidewalks and streets more or less. In the larger grounds a fence is probably worth while. If it is covered with rambler roses, morning-glory, or honeysuckle, it may add much to the appearance of the ground. The fence separating the girls and boys takes too much room, and

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where there is supervision it is not necessary. It is desirable, however, that there should be a separate place for little children, and a low hedge may be put around it if the ground is large.

TREES.

Trees are desirable on school grounds. During the late spring, in September, and all through the summer, if the ground is used, shade is necessary for securing the attendance of the children. Trees also add a touch of nature and make the ground more attractive, but probably one-half to two-thirds of the trees now in school yards ought to be taken out. A tree is a fine thing in itself, but a tree in the middle of a tennis court or a baseball diamond is a nuisance. A double row of trees, one just outside the sidewalk and the other just inside the line of the playground, is desirable, with a possibility of leaving an open space directly in front of the building and of adding also a double row along some of the walks, and possibly putting another row around special features, such as the tennis courts. But no tree should be planted on a school ground without a definite plan.

A tree can not be simply pulled up or dug up and stuck down into a hole, with the expectation that it will live. Ground 5 or 6 feet in diameter should be excavated to a depth of 2 or 3 feet and filled in with good ground. Usually the top of the tree must be cut off if a number of the roots have been broken in transplanting, and it should be boxed.

It is often wise to have the inner and the outer row of different varieties of trees. If the inner row is of horse chestnuts; or, if in the South, of magnolias; or, if in the Southwest, of olive or palm trees, the double arrangement may add much to the beauty of the ground. Sugar maple is probably the best single tree—but it grows slowly. Basswood also is an attractive tree in the North, especially when in blossom in the spring. It is often wise to plant a rapid-growing tree, such as the cottonwood or the soft maple, alternately with a slow-growing but finer tree, such as the sugar maple. Mature trees should be 30 to 40 feet apart, as they will not grow fine tops otherwise. As the slow-growing trees mature the rapid-growing ones may be cut out.

On the larger grounds it would be wise in many cases to plant in some retired part a small park or grove, perhaps 100 feet square, where play equipment could be placed and where the children could eat lunch in warm weather. This would offer an opportunity to put up bird houses, and to encourage woods flowers and squirrels.

The tree as a gymnasium.—A large tree, with spreading branches, offers many opportunities for play and for athletics. A limb is the cheapest and the most satisfactory attachment for a swing, as it furnishes also shade, and much cooler shade than is cast by a canvas awning. It also furnishes possible attachment for a trapeze, parallel rings, and even for flying rings, if there are a number of large branches. Climbing ropes or poles can be attached to the limbs as easily as to the framework of a gymnasium, and if knotted ropes are used, attached high up, the tree may be a pretty complete gymnasium.

A MENAGERIE.

All children are interested in animals. It is they who maintain interest in the zoological gardens in our cities, for most of those in attendance are children and adults who are with them. In the yard of the Emerson School, in Gary, Ind., in 1917, there was a henhouse with 40 chickens; a coon tree with 3 coons; a tame crow; and 2 or 3 wolves. It may be a question how far the

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school can afford to go into the menagerie; but as a minimum for the kindergarten and the first grade there should be at least a few rabbits and guinea pigs, and possibly white rats. The care of these pets is an excellent form of moral training, as the animals are always personified. At the Francis Parker School in Chicago the chicken house is made the basis of much of the arithmetic work, as the children buy the feed, gather and sell the eggs, and keep track of expenses and profits. Incidentally, they have a new fundamental interest and learn much about the ways of hens. There should be bird houses in the trees, and as many birds and animals as feasible should be encouraged to live there. The Society for the Study of Education in New York City has been putting white rats and white mice and guinea pigs into many of the schools in New York, because of the educational value which they believe these pets have.

THE SCHOOL GARDEN.

During the war there has been an enormous increase in gardening in England and in America. Directors of school gardens have been appointed in many cities, and many children have had gardens either at school, in the back yards of their homes, or on vacant lots. Gardening gives considerable outdoor exercise, and makes children familiar with one of our fundamental occupations and also with many of the laws of growth. However, it is far less important on school grounds than play, and where the ground is small the space can not be afforded. If the school has a garden, it should be placed at the back, where it will interfere with play as little as possible.

EQUIPMENT.[2]

Many people who have not thought much about it always think of the swings and seesaws and similar apparatus as constituting the playground. However, there are no swings or similar equipment on the grounds of the English preparatory or public schools, and there are practically none on any of the school grounds of Europe. The training which comes from a swing or seesaw is not comparable with the training that comes from baseball or volley ball or basket ball. The prime use of school grounds should always be for vigorous games. However, there is a place for equipment, and in the larger grounds this equipment is valuable.

The swing.—In the location of the swings a retired site should be selected. The chief danger is not, as many people think, that the child will fall out, but that children who are running by will be struck. If two heavy children are standing up and swinging hard, a child struck in the head by the swing board will be seriously hurt and may be killed. The swings on the school yards should be for the smaller children, and it is best not to make the swing frame high. Children like best a high frame, but such swings will usually be monopolized by the big children, who might better be playing volley ball or basket ball or taking part in athletics. It is better to put in a frame not more than 10 or 12 feet high, which can be kept for the smaller children. It does not take so much space and is not so dangerous.

Children are apt to dig out the ground under the swings with their feet. If the ground is not very loose water remains there after rains and spatters the children as they go back and forth. It is often necessary to put a wooden or concrete platform under the swings.

[2] For a fuller discussion of this topic see "The Practical Conduct of Play," by the author.

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The swing offers a standard attraction against which the teacher must compete in organizing activities on the playground. If she can make pull away, prisoner's base, volley ball, and other games more attractive than the swings she is a success. The equipment is often a decided handicap in organizing activities.

So far as the swing has physical value this consists in swinging oneself. It is of no advantage for one child to swing another.

Children like to stand up in swings, and they get better exercise in this way. The danger is not considerable. But it is objectionable for girls with white underwear to stand up, and it is particularly objectionable for boys to swing girls who are standing up.

The chief difficulty from equipment, however, is from its use at night. If the swings and other equipment are left up, it sometimes becomes a vicious meeting ground for boys and girls, very objectionable to the neighborhood. It is often best to take down the equipment at night.

Sand bins.—The sand bin is always popular with little children. There should be one on every school ground. It does not require a bottom, and will keep moist better if the sand is in direct contact with the earth. The bin may be of concrete or of planks. There should be a molding board or seat around the edge.

The bin should be placed either in the shade of the building, or under a tree or trellis, or a canvas cover should be put over it. It is not best for it to have a permanent cover, as it requires the rain and sunshine to keep it in a sanitary condition. In Germany the sand is changed every week.

It some places spoons and pails are supplied. These always add to the interest, but they are difficult to keep track of, unless the sand bin is in a section which is used more or less exclusively by the kindergarten and first grade, and can be supervised directly by the kindergartner as a part of her work.

Seesaws.—The seesaw or tilt is one of the least valuable pieces of apparatus, as it gives little exercise, and children are often hurt standing up on it; or one child slides off the end, and lets the other child down with a bang. It is, however, well liked by children, and is safe if the framework is low and the board is long. It is dangerous otherwise. It should have a handle. There is a kind of seesaw made with a spring which prevents it banging down on the ground.

Blocks.—In the school grounds of Gary the children are furnished with large building blocks. Where there is a satisfactory place to keep and use them, they are desirable. The blocks should be of different shapes, but the common ones should be about the size and shape of an ordinary brick, with cylinders and towers which can be used for architectural effects. Children will never use the small blocks sold in toy stores where they can get larger ones.

The slide.—The small athletic slide is worth while for the small children. One 12 feet long and 5 feet high can be purchased from the mail-order houses for $18, while the larger slides, 15 feet long and 7 feet high, can be purchased for $25. These slides are furnished with a maple board and have steps going up, and a platform and guide rail at the top which prevents the children from falling off.

Slides are made of steel, oak, or maple. The steel slide is expensive, hot in summer and cold in winter, and rusts after it is worn by the children's shoes and wet by the rain. The maple slide which is made by a Chicago manufacturer can be turned over or detached so as to protect it from the rain, and can be taken in at night. It is a very serviceable slide for school grounds.

Children are sometimes pushed off the slide, but seldom. I have seen children less than 2 years old going down the slide head foremost on their backs, but I have never known any of them to be much hurt.

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The trapeze and parallel rings.—If the same apparatus is put into the playground for little children that is put into the ordinary monkey cage, the children will be delighted with it. They love the horizontal ladder. All of the equipment which I have spoken of thus far, except the higher swing, belongs in the playground for the little children.

The giant stride.—The giant stride or merry-go-round, as it is often called, consists of a tall steel or wooden pole, usually about 20 feet in height, on the top of which is a rotating wheel or disk, with six ropes or chains usually terminating in a ladder. It is popular with children from 7 to 12 or 13 years of age, and offers considerable exercise.

Merry-go-round.—The merry-go-round or revolving platform is a piece of equipment which should not be put into school grounds. It is very expensive, and, outside of furnishing a seat or grand stand, it has no value except for the children who push the others around. Several years ago we put one into a park opposite one of the schools in Washington. At the end of the first week the teachers asked us to take it out, because certain of the children went on it at recess and got so sick they were unable to work for the rest of the forenoon. We put it into another ground with the same result. I am not especially subject to seasickness, as I have never been sick in crossing the ocean several times, but I always feel uncomfortable riding on one of these merry-go-rounds. My working efficiency is cut down from 20 to 50 per cent for an hour afterwards. I believe a merry-go-round will reduce the working efficiency of the children using it at least 20 per cent. This is true also of the board which is fitted on ball bearings or otherwise to the top of a post, where a child lies down and another child whirls him around until he is seasick.

Benches.—There ought to be benches on school grounds. It is well to put them around trees or along the side of the playground.

Responsibility of schools for accidents.—Six or seven years ago there was an accident on a swing in a school yard at Tacoma, Wash. The parents of the injured child sued the school board, and secured a judgment against it, with the result that the equipment was taken out of many of the school grounds throughout the State. The next year a similar accident occurred in a playground in Milwaukee, but in that case the judgment was against the plaintiff on the ground that the school board in conducting playgrounds was performing a public function and was not liable. Both of these judgments seem questionable. To assert that play equipment is inherently dangerous, and that therefore the school board is liable, is a large assertion, but to assert that the school board is not liable because it is performing a public function is equally questionable. If the school board puts up a swing of faulty construction, and places it in the wrong position, it should be liable, the same as the city is if it leaves unguarded an excavation in the street or across the sidewalks. But there are better grounds for holding the school morally responsible for the scarlet fever, measles, whooping cough, diphtheria, tuberculosis, and anemia that the children contract there. If school boards were to be responsible for a mortality and morbidity more or less traceable to school conditions, it might be necessary for them to abolish the school buildings and to erect playgrounds instead.

Purchase of equipment.—There are a dozen or more firms which make a specialty of play equipment. This equipment is expensive. It is, however, substantial, well made, attractive in appearance, and most satisfactory, if the board has the money. The board should not order an equipment set up unless the factory is near. It is much cheaper to order the fittings and have the framework furnished and erected by local people.

Construction of equipment.—Equipment may be made either of wood or steel. Most of the equipment of the early days was of wood, unpainted, and

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unattractive in appearance. The crossbeam at the top soon rotted out from exposure to the air and rain, and within two or three years, and perhaps in a single year, the posts rotted just at the surface of the ground. These troubles are not necessary. Where a wooden framework is used it should be painted either green or some other color that will harmonize with the ground. The crossbar at the top should be covered with tin or waterproof paint, and the lower part of the posts should be either creosoted or set in waterproof concrete. Under these conditions a wooden framework will last for several years and may be nearly as satisfactory as a steel framework.

However, in general, it is best to use the steel framework, as this is less conspicuous and better looking, more durable, and not much more expensive. The ordinary gas pipe is generally used, though that of double thickness, 2½ inches interior measurement, is often selected for the swings. If the black pipe is used, it must be kept painted to prevent rusting. The galvanized pipe does not require this, but is considerably more expensive. In a good-sized system it is cheaper for the city to construct its own equipment.

The sand bins should be locally constructed. Horizontal ladders, trapeziums, and rings can easily be put up locally. The head of the giant stride, with its ladders, can best be purchased as a rule, and the slide can be purchased nearly as cheaply as it can be made.

Equipment made by the children.—In a school system where there are technical high schools, or where there is a good deal of manual training, the children should make the wands and dumb-bells, the jumping standards, the wading pools, and the running tracks, and they may even put up, under supervision, the swing frames and other apparatus. Nearly all of the equipment at Gary is now made by the children.

Care of equipment.—Equipment will not take care of itself. Swings especially need to be watched, as the swing is apt to wear through the hook or other attachment at the top, or the links will wear through, or the rope will break, or sometimes be cut by vicious children.

SUPPLIES.

Of more importance than apparatus, such as swings and sand bins, are the supplies for games, such as baseballs, basket balls, volley balls, and footballs. Many school boards have taken the attitude that equipment of this sort should be furnished by the children, but they must remember that if a boy brings his baseball to school, it is batted to pieces by 17 other boys, all of whom get as much good out of it as he does.

Where play is put into the program of the school, play supplies become a part of the school equipment in the same way that equipment in a gymnasium does. School boards always expect to furnish pulley weights, dumb-bells, and Indian clubs. They should furnish, likewise, the equipment essential to play. In a large proportion of the cities, and in some of the country districts, this is now being done.

Probably the best arrangement is for the equipment to be furnished to each class, so that when it has a play period it will have its own equipment at hand. For the fifth and sixth grades this should be about as follows: Two playground baseballs, with four bats, two volley balls with two extra bladders, four laces and two needles, and one soccer football. For the seventh and eighth grades there might be added to this one basket ball to each grade, though I do not regard this as essential, as basket ball is not well suited to the elementary school and can not be used as a class exercise. In each classroom there should

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be a small cupboard, cabinet, or closet in which these supplies can be kept under lock and key.

Besides this there should be at least one complete set of the same equipment for the school as a whole that can be used before school and after school and on Saturdays, and perhaps an entirely different set for the summer vacation. There should be also a stop watch and a 90-foot tape for each school.

TIME FOR PLAY.

The fundamental requirement for getting things done in physical training is time. The tendency is to provide a half hour in excess of recesses. This is already in effect in several of our larger cities, in several States by law, and in many of our colleges and universities. This should be the minimum, beginning with the junior high school. But up to that time all children should have at least one hour a day. This is essential to their health and proper physical development. The chance exercise of city streets does not give the vigor children ought to have. As to whether this hour should be added to the school day or taken from it there is question. In the lower grades it may be well taken from the school day, and in the upper grades it may be added to it. The New Jersey law says that where the day is only five hours in length the half hour of required physical training shall be added to the school day, and in other cases it shall be taken from it. In the State of New York also there is a provision in many cases for beginning 10, 20, or 30 minutes earlier in the morning in order to make provision for this physical activity. In Gary the school day is seven hours in length, while in most European schools it is at least six hours. We shall be justified in adding the hour to the school day if it is necessary, but it scarcely seems necessary in the lower grades.

More important than the time put into the program is the provision that the activities shall be of such nature that the children will carry them on outside. Organized play must furnish interests and enthusiasms for the vacant lots and streets as well. One of the interesting discoveries of the Cleveland survey was that drawing and other art, while fundamental interests of children, were not liked at school as well as arithmetic or geography, while physical training ranked below several other subjects. The games taught in the classrooms were not played outside. The time spent in organized play will always be inconsiderable. The important consideration is that it shall furnish vital interest for leisure hours.

If with our present playgrounds we are to provide adequately for the physical needs of children, it is necessary that they shall be used at maximum efficiency practically all the time from 8 o'clock in the morning until 10 o'clock at night. Besides the regular class periods there should be some one on the grounds to organize and direct the games from 8 o'clock until the beginning of school, during recesses and noons, and after school; also at night if the ground is lighted, and on Saturdays, during the summer time.

THE GARY SYSTEM AND ITS MODIFICATIONS.

The system which has probably had the greatest influence on the development of play in this country has been the system inaugurated by Supt. William Wirt at Gary, Ind. In Gary there is a departmental system, beginning with the first grade. The day is lengthened to seven hours, and the children in the first five grades have two hours a day in gymnastics or organized play, while the children from the sixth to the twelfth grade have one hour a day.

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There have been criticisms of the execution of this plan in Gary, but there have been few criticisms of the ideal it represents. It has been largely responsible for putting play into the programs of hundreds of schools in other cities. In the recent surveys by the United States Bureau of Education of the city of Memphis and of the Hawaiian Islands, the work-play-study method was recommended. Nearly every large city is now experimenting with some phase of this method.

The platoon system.—The system used in the cities of Pittsburgh and Detroit is known as the platoon system. This has recently been adopted in the city of Detroit, and all new buildings are to be built to accommodate schools of this type. A very admirable report covering every phase of the subject has recently been issued by Asst. Supt. Spain, from which I quote as follows:

In the fall of 1918 the platoon organization was installed in 6 schools. In the fall of 1919, 9 additional schools were provided with this form of organization. At this date (May 1, 1920) 6 platoon schools have been in operation for a year and nine months and 9 schools for nine months. The data submitted in this report and the conclusions reached are based upon the observation and investigation of the work as carried on in the entire 15 schools.

In several of the 15 schools the platoon organization includes the first and second grades, but in the majority it does not extend below the third grade.

The standard school day adopted is six hours long—a three-hour session in the morning and a three-hour session in the afternoon.

Each pupil spends 90 minutes of the morning in the "home room" under the control of the home-room teacher and the remaining 90 minutes of the morning in the special activities—spending 30 minutes in each of three special rooms. In the afternoon he again spends 90 minutes in the home room and the remaining 90 minutes in three special rooms.

No teacher is expected to teach over five hours a day and each teacher consequently is entitled to two half-hour rest periods daily. To provide for this, relief teachers are employed who have no regular rooms but go from room to room relieving other teachers.

In addition to the regular half-hour daily for physical work, it is desirable to schedule a daily period for each pupil for play.

Scheduling a daily outdoor play period for each child presupposes a place to play. Theoretically it means that the playground will be used every day. Practically this is impossible, although it can be used a much larger percentage of the time than it is ordinarily used in elementary schools. In schools in which we now schedule a play period for each child every day, the program provides an alternative exercise in case of inclement weather.

In the new buildings now under construction we shall provide for this space by building covered outdoor play courts or roof playgrounds in addition to the gymnasium.

The platoon school provides 30 minutes daily in the auditorium for every pupil.

Two glass-covered play courts, usable throughout the year, are planned for the new school, with their combined capacity 80 pupils each period of the day. Their total daily capacity is 960 pupils.

Taken as a whole the results from standard tests show that in both actual and comparative achievement, in efficiency of instruction, in type of children affected, and in the efficiency of supervisory control, the platoon schools in Detroit have, so far, done fully as well as the conventional city schools so far as instruction in the drill subjects measured is concerned, and probably a little better.

The opinion has been expressed that frequent changes of classes in platoon schools make for disorder and confusion. In a word, it is thought that freedom tends to degenerate into license. The exact opposite is the fact. It is the almost unanimous opinion of principals, teachers, and others who visit the platoon schools that there are no finer examples of self-restraint and self-control than are to be found in these schools. They must be studied at close range to be appreciated. The truth is that the platoon-school child is too happy, too much interested in his work, and too busy doing things that he finds joy in doing to find time to be disorderly. It is the dull monotony of the regular school

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routine and the intense desire for physical relief and relaxation that make for disorder.

In the light of the facts revealed by this experiment, Detroit has determined upon the gradual reorganization of the elementary system on the platoon-school basis.

Fifteen platoon schools are now organized. With the completion of the new schools now under construction, there will be 30 platoon schools by January, 1921. The new 1920–21 building program, for which funds are now available, will provide for a number of additional schools of this type. There will be at least 50 platoon schools by January, 1922.

There is also a report of the McKelvey platoon school, Pittsburgh, by the principal, William F. Kennedy, which shows similar results. Pittsburgh has been experimenting with the platoon system for three or four years, and is increasing the number of its platoon schools each year.

Since this system proves to be cheaper to construct and to maintain, since it is better liked by principals, teachers, pupils, and parents, since it yields larger returns in the ordinary classroom subjects, while giving culture in a dozen by-products, equally important, there seems to be no reason why it should not become the educational policy of this country.

THE GYMNASIUM.

It is of advantage for a school to have a gymnasium, as the weather is often not suitable for exercise out of doors. A gymnasium permits a program to be carried out without interruptions due to weather. It is available at night, and makes class work easier. Nevertheless, it must not be thought that a gymnasium is indispensable to a sytem of phyical training. Most of our gymnasiums consist mainly of basket-ball courts with roofs. Exercise is much better taken in the open air than indoors. Calisthenics, wand, and dumb-bell drills, games, and many dances are better out of doors when the weather is pleasant.

ATHLETICS.[3]

Athletics is an old racial activity. It represents in modern life the activities of the savage, who must constantly run, jump, climb, throw, and strike. These activities not only furnish the elements of all athletics, but of all games as well.

Athletics have often been in disrepute among educators. Until the last decade they were usually under the control of the student body, and were carried on to win victories. They brought into training only those who were strongest and most capable, whom they often overtrained and made onesided. The sportsmanship represented was sometimes a denial of all of the ideals of Christianity and gentlemanly conduct. The taking over of athletics by the school systems of America is one of the greatest events in ethical training now taking place.

Medical examination.—There is always danger of strains in connection with athletics. If children are to take part in the more violent forms, such as basket ball and the longer runs, a physical examination should be required.

The elementary period.—It is during the elementary period that there is the greatest restlessness. Pedometer records show that the greatest physical activity is at that time. If 100 college students were challenged to run a 100-yard dash, probably not more than 20 would run; perhaps 40 in the high school would run, while practically everyone at the age of 10 or 11 would run. Children of the elementary period love to run for the sake of running, and to jump for the sake of jumping.

[3] For fuller treatment consult "Education through Play," by the author.

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Athletics for girls.—Spencer, in his essay on physical education, speaking of the absence of boisterous play of any sort in schools for girls, says:

It appears on inquiry that at "establishments for young ladies," noisy play like that daily indulged in by boys is a punishable offense, and it is inferred that this noisy play is forbidden, lest unladylike habits should be formed.

Girls have been greatly handicapped by the attitude of the public toward them in this regard. They are usually dressed better than their brothers, and required to keep their clothes cleaner; they usually have tighter shoes, less suited to outdoor exercise. Their short skirts and white underwear do not allow them to climb or fall down and seem modest. The long skirts which they put on at 13, and especially hobble skirts and high heels, practically prohibit vigorous exercise. The girl is not encouraged by her parents or the community to take part in vigorous games as her brother is, and is apt to be called a tomboy or a hoyden if she runs or jumps, or climbs, or plays baseball, as her brother does. Excellence in games does not confer upon her the same distinction as it does upon a boy. It is possible also that she does not inherit quite the same interest in competitions of a vigorous nature that her brother does. However, it would appear that the good physical development, good health, good complexion, bright eyes, and glossy hair which are results of abundant exercise in the open air, are a greater asset to a girl than to a boy.

Most of the handicaps to which woman is subject on account of her sex are unnecessary handicaps, due either to vicious suggestion, or to the fact that girls have not had during childhood a normal physical life. Girls who have had a vigorous outdoor life are seldom periodic invalids each month. In the school of physical education at New Haven these periods are disregarded, except in swimming, apparently to the advantage of the girls in every way. Recent studies at Columbia under the direction of Prof. Thorndyke show that there is apparently no greater fatigue in doing either mental or physical work, and no greater nervous instability during this period. There is no reason why a young woman should not compete with a young man on nearly equal terms in almost any line of effort provided she has had as healthy and wholesome a childhood and developed as robust a physique as he. But the most important reason for caring for the girl's health and physical development, however, is motherhood. The health of the mother is much more significant to the race than the health of the father, because her health determines the child's, not only at the moment of conception but during the period of gestation and nursing as well, and the start which the child gets from being nursed by a healthy mother apparently makes him more vigorous throughout all his childhood.

Girls of 10 or 11 can run as fast as their brothers of the same age, and there is no reason why they should not take part in contests of this sort. There seems no reason why they should not jump nearly or quite as well. Girls who start early and play regularly will play indoor baseball, volley ball, and tennis nearly as well as boys of the same age.

Running track.—Along the side of all our larger school grounds there ought to be a straightaway running track about 100 yards in length, and 10 or 12 feet wide. The cinders may be taken from the furnace to make this, but they will need to be rolled with a heavy roller, or crushed, or ground. The 50, 60, 75, and 100 yard distances should be marked by posts at the side. There ought to be a stop watch for every school, that the children may be timed; though this may be done with an ordinary watch where the competitions are by classes.

Jumping pit.—There should be a jumping pit also at the side of every ground, and standards for the high jump. Children love to jump, but in most

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places they will be found to be jumping upon the hard ground. It takes less than half an hour to excavate a jumping pit. A take-off board about 6 or 8 inches wide and 5 feet long should be set in the ground level with the surface, as a starting point, and then the pit should be either kept spaded up or filled in with sand, sawdust, shavings, or some other soft substance. It is well to have the distances marked on a board at the side of the jumping pit.

The horizontal bar.—There should be at least two horizontal bars, one at a height of about 5 feet 6 inches and the other at a height of 6 feet 6 inches. It is well to excavate under these bars and put in sand, shavings, or sawdust. No one cares to exercise in a gymnasium without a mat underneath. A fall from a high horizontal bar upon hard ground may result in serious injury.

Class athletics.—With the running track, jumping pit, and horizontal bar, it is possible to carry on the tests for the Public School Athletic League. The first test is that the boy shall run the 60-yard dash in 8⅘ seconds, jump 5 feet 9 inches standing, and chin the bar four times. In New York, under Dr. Gulick, the competitions were by classes, the rule being that, in order for a class to compete, 80 per cent of the members must take part. In the competition of a class, there must be one teacher at the starting line and another at the finish. At the start the teacher waits until the second hand is at the minute mark and starts the first boy running. When the first boy crosses the line, the man at the finish brings down his hand to start the second boy, and so on until all have run. If 40 boys are running, and the time is found to be 320 seconds for the 60-yard dash, the average time, or the class average is 8 seconds.

In Oakland and Detroit the athletic league test is expanded into a pentathlon for girls and a decathlon for boys, participated in by most children from the fifth to the eighth grade. For a fuller account see reports from those cities.

Efficiency test.—The efficiency test is much the same as the class athletics test. In most cases the standard test of the Public School Athletic League is used, though in some cases a number of other tests are added, and there may be a graded system of scoring according to accomplishment. The following are the instructions and results for the schools of New York State:

Eighty per cent of the pupils enrolled April 25 over 8 years of age (having had their eighth birthday on or before April 25) must be tested in the three events listed below between the dates April 25 and May 21, their results tabulated as outlined below, and report sent on blank similar to form herewith to the district superintendent of schools on or before May 23.

Medical safeguards. The school medical certificate should be consulted to determine the physical fitness of each individual to compete in the contest. If the teacher is in doubt about the condition of any pupil the child should be referred to the school medical authority for examination before being allowed to try the events. * * *

Eighty per cent of the enrollment of all schools entering were tested between May 1 and May 22, and results from 56 cities and 203 villages, involving nearly 300,000 school children, were computed and forwarded to the State department before May 26.

Special suits.—An objection often made to athletics and play periods on school grounds is that the children go out in their ordinary clothes, run, jump, and play until they are covered with perspiration, and then go in to sit down without changing their clothes, and are likely to catch cold. This is a real evil, yet we must remember also that manual workers do this every day, and that all of us do it more or less in summer. We can not expect the woodcutter, or mechanic, or farmer to take a dozen baths a day. There is an advantage, however, in changing to a special athletic suit and taking a shower afterward. This is the custom with college teams. It has always been the practice also in the preparatory and public schools in England, and there is no reason why

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boys should not change for athletics on the school ground in the same way that they do for gymnastics. The only requisite is that the period shall be long enough so that too much of the time will not be wasted in changing clothes.

In the high schools.—The difficulty in the organization of play in the elementary school is that the teachers are classroom teachers, without special training. But with the junior high school, where the teachers are specialists, there should be an adequate supply of physical trainers. From the seventh grade on it should be possible to provide a period of physical training for all children every day.

A CURRICULUM OF PLAY.

Probably not more than two million out of the twenty-five million school children in the United States have access to a gymnasium, and the number may not be more than 1,000,000. The only method of physical training that is available to all is athletics and play. It is obvious, however, that games have different physical, social, and moral values. We are now getting curricula of games in our State and city syllabi of training. There are many advantages from vigorous play in the open air which can not be had in a gymnasium. Children who have been sitting in cramped posture in school, ofttimes at desks not fitted to them, become restless and need physical relief; but quite as much they need also the fresh air of outdoors, complete relaxation from the effort of attention and study, and the social opportunity which comes from playing together, for it is in these relations of play that children learn how to give and take and to get on with each other. The boy who does calisthenics to order is getting physical exercise and nothing else, but the one who plays baseball is getting physical exercise for nearly every muscle, and he is also getting the open air, the most intense sort of social training, and a development of judgment such as he can get in hardly any other way.

The requirements which any game must satisfy, if it is to meet the needs of the school, are that it shall economize space; that all the children can play it; that it be reasonably safe; and that the children will carry it on outside of school and after their school days are over, so that it may meet the need of recreation in an age which is getting more and more leisure time without many new vital interests to fill it. We may safely leave to the kindergartner the play of the kindergarten and the first and second grades. Beginning, however, as low as the second grade, children take great interest not only in the ring games of the kindergarten but also in such games as slapjack, whip tag, cat and mouse, Jacob and Rachel, and squirrel in a tree. When they are a little older they are fond of three deep, prisoner's base, pull away, and the like. For the older children there are three games which meet fairly well the conditions. The one which meets all of these best is volley ball. Volley ball is an admirable school game, because the equipment is simple and inexpensive. It is played over a net, which for the elementary school should be about 7 feet high, and perhaps 8 feet high for the high school. It keeps the head up and the shoulders back. It is the best corrective we have of the bad postures of the school. There may be as many as 600 players on an acre of ground. It is played by girls as much as boys. A class of 40 can be taken into the ground to have two games of volley ball at the same time. This will give them a better period of physical training than they could have in any kind of gymnasium, and they will get at the same time relief from the conditions of the classroom, complete relaxation from their studies, and the social opportunity which comes from playing together. There is also every probability that this game will be carried on into adult years. Almost the only game that business men are playing in our Y. M. C. A.'s is the game of volley ball. Volley

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ball is played either indoors or out, and it can be played every month of the year out of doors, as it may be played satisfactorily with mittens on.

A second admirable game for school use is playground baseball, with a 16 or 17-inch ball, if the ground is small, or with a 14-inch ball, if the ground is larger. There should be at least one diamond for the girls and one for the boys on every school ground, with the distances definitely marked. For the older children, with a 14-inch ball, 45-foot diamond will be about right, while, if they use a 17-inch ball, the diamond should not be more than 35 feet on a side. It is well to play with 10 players, using two shortstops.

Soccer football is another admirable game for school grounds. Boys love it from the time they are 9 or 10 years of age. It is compulsory in the preparatory schools of England from the time the boys are 8 years old. In this game there is no tackling, and the person is not allowed to touch the ball with his hands or arms. The skill consists mostly in dribbling the ball with the feet and passing it along to other players on the same side. It is played to a considerable extent by the girls in the English high schools and also by some of the high schools in the East. Nearly all of the larger colleges and normal schools for women also have teams. Soccer is not as rough as basket ball, and is not unadapted to girls' play, if the local traditions are not too much against it.

Of course most of the older boys and girls want to play basket ball, and basket ball has its advantages, but it can not well be put into the program as these other games can, because it does not take enough players and because there are always some who can not stand the strain. The effort is more continuous in basket ball than in football, and the strain should not be incurred without a thorough physical examination.

Classroom games.—When play is in the program and the weather is disagreeable, the period may be taken by play in the classroom. There are a number of classroom games which offer satisfactory exercise and relaxation.[1] All the windows should be open.

A covered play court.—There should be some covered place where children can play in bad weather. Some teachers think children should not play out of doors if the weather is cold or snowy, though it is often at these times that the children themselves prefer to be outdoors. There is no objection on their part to weather around zero, if they do not stay out too long. In New York schools the first floor is a covered play court. In some of the new schools in Portland, Oreg., a play court has been covered with glass. Each of the new schools in Detroit has two glassed play courts.

Folk dances.—There has been a great increase in dancing during the last two decades. The most wholesome form which this has taken is folk dancing. Girls like these dances, and some of them are pretty. When danced in costume they make an interesting feature at a school exhibition and often interest the neighborhood as well. Most of them give excellent exercise, and many can be danced out of doors on any smooth space to the music of a victrola.

School without a playground.—There are many schools in the United States that have no playground, and for them the situation is serious, but it is still possible to secure much outdoor exercise and play. Many of the German schools have no playgrounds, but they arrange with the park department for the use of the municipal playgrounds at certain hours. The only way that I can see that municipal playgrounds of our cities can be used during the day is for the schools to use them, and if the children have a physical-training period of an hour or more, it is quite possible for this to be done. It is wicked to allow the playgrounds of a crowded city to lie idle most of the day.

[1] See Bancroft's Games for the Playground, Home, School, and Gymnasium.

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In many cases it may be possible for the children to use some skating pond in the neighborhood in the winter. Skating is always popular.

The forms of exercise which are really most feasible, however, for such schools are school excursions or hikes and cross-country running for the older boys. These are entirely practical for nearly all schools except those which are situated centrally in our great cities, and even for them walking trips of interest can be taken to various points about the city.

All these schools which are without playgrounds should organize the older boys and girls into Boy and Girl Scouts and Camp Fire Girls, so far as possible, so that they will take the exercise and games which are suggested by these organizations. It is always possible, too, that teams and leagues may be organized at the school which will play off contests and carry on their athletics on a ground which may be at some distance from the school.

Every school that is without a playground adjacent to it should manage, if possible, to have a week-end and summer camp where its students may go to get the exercise and open air for which they do not have an opportunity during the year. Some of the larger schools in the Hawaiian Islands have week-end cottages to which both students and teachers go at different times.

A school on a hill.—Athletics and play are difficult for a city that is set on a hill, because there are very few things that can be done on a hillside except to slide down in the wintertime. The ground must be terraced in order to play games upon it. It is almost impossible in most cases to get a large enough level space in hill cities to play much if any baseball, but volley ball and playground baseball may still be played. It is easy to find a place for such vigorous games as three deep, dodge ball, and tether ball, and abundant space can be found for equipment for the little children; so the situation is not entirely irremediable.

SPECIAL PLAYGROUND FOR ATYPICAL CHILDREN.

The physical examinations have shown that there are a considerable number of children in all of our schools who do not profit by the regular program. Among these are children who are tubercular, anemic, nervous, undernourished, or who have some structural defect of the heart. The tendency is to put these children into open-air schools, to give them special lunches in the morning and afternoon, and to restrict their exercise to the less violent forms. There were 7 playgrounds for undernourished children in the city of New York in the summer of 1920. Special schools for undernourished and tubercular are being started in many places. There are also 11 schools in New York in which there are special classes for children who have heart trouble. All of these children need a type of playground which will permit them to live most of the time in the open air, to have moderate exercise with frequent rests, and at least two good lunches besides their noon lunch each day.

THE SCHOOL EXCURSION.

The United States has done less with school excursions than many other countries. Sixty-five hundred children went out from the city of Berlin alone for walks of one week or more in duration during the summer of 1913. The new code for Prussia requires one whole day walking trip each month for all school children.

Similar walks are taken from the schools of Scandinavia and of England, though not to so great an extent.

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Children should be taken to see points of interest about their city as a method of developing civic interest and loyalty, as a means of interesting them in different trades and professions looking toward a final choice for themselves, for the sake of the physical exercise involved, and for the general educational value and information which such trips convey.

The world of books must be interpreted by a world that has been seen, touched, and handled. The only way we can test the accuracy of the things we read is by first-hand experience. There are dozens, if not hundreds, of points of interest in each town and its environs which should be visited by children. In New York State provision is made for nature-study and similar trips between 3 and 4 o'clock in the afternoon. For any of the longer trips, however, an entire half day will be needed, and Friday afternoons might often be well spent in this way.

WHO IS TO HAVE CHARGE?

There are two types of playgrounds in most of our larger American cities, one of which is known as a park or municipal playground, the other as a school playground. In a number of cities a recreation commission has been appointed to organize these different activities, and in some cases the work both on school and municipal grounds is under the control of this single body. The only large city in the country, however, where there is complete unity and the work of the playgrounds and in the public schools is under a single supervisor is in Oakland, Calif., where the physical director has charge of all physical training in the schools and of play on school, on park, and municipal grounds. In the city of Detroit the recreation secretary has charge of the play on the school grounds during the summer and after school and on Saturdays, as well as the municipal grounds, but does not have charge of the physical training in the schools.

However, the play of school children is a school problem, and the school can not as a rule intrust it to a recreation commission or any other body. So far as play is organized into the program, to relegate it to any other body is to break the unity of control.

The unsupervised playground.—Before discussing further the problem of organized play it may be well to consider what happens on the ground where there is no supervision. It is to be feared that many teachers do not know very well just what is going on. Children who come from good homes learn bad language and hear objectionable things in the unsupervised time on the school playground. There are vicious older boys and girls on nearly all school grounds who have had wrong experiences, and when these children get together, or have nothing to do but gossip with younger children, they may corrupt a large number. A girl can play basket ball with five loose girls without suffering from it, but let her gossip with these girls for half an hour and it may take a lifetime to overcome the effects of this half hour's gossip. The only way that the atmosphere can be kept clean on the school grounds is to keep something going on.

Many parents of little children are made painfully aware by the tales daily brought home, even if they have forgotten their own childhood, how often little children are misused and illtreated by older children. There seems to be a streak of pure cussedness in boys about 13 or 14 years of age which often leads them to all kinds of cruel treatment of younger children.

We who have watched school grounds where play is unsupervised know that there is not only much bad language and bad conduct, but that the play is mostly horseplay, where the special delight is to trip one another or steal ea-

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other's hats or coats; that so far as there is play it is play almost absolutely without ideals of sportsmanship; that it does not train in any of those manly and chivalric qualities which make sportsman a name almost synonymous with gentleman.

It is a question whether physical activities at the school are to fall to physical training teachers, or whether there is to be a supervisor of physical training for the system such as we have in drawing and music, and the individual work is to be done by class teachers. Both of these methods are used in different places. In the junior high school and high school, and wherever the platoon or Gary system is organized, the physical training should naturally fall to physical directors, but where the old system prevails, and the children do not change classes, it must be carried on largely by classroom teachers.

There are advantages in having the regular class teacher take charge. The teachers need the exercise as much as the children, and play together brings about a more intimate sympathy and understanding. It often solves the problem of discipline.

We are all familiar with the system of teaching as established by Bell and Lancaster in England. Supt. Wirt arranges for high-school pupils to do apprentice work in organizing games and athletics the same as in cabinetmaking, printing, and other crafts, and the New York State syllabus makes the following provision for the organization of play by older children:

Older pupils should be trained to direct the group plays and games of the younger group and used as leaders while the teacher is busy with older children. This should be a definite part of the training of the older pupils, who should also be given experience in taking charge of the "B" work. Make it an honor at first, using those who have made best progress, but give all a chance sooner or later.

This seems to be almost the only way that play can be organized adequately in many rural schools. Older pupils or squad leaders may be very effective assistants.

Such assistance of little children in their play is one of the ways by which Camp Fire Girls may receive honors. It is a necessary part in the training of every girl if she is to be a capable mother and a real playfellow with her own children. For many years this has been a contemplated requirement for all girls in both Scandinavia and Germany. At puberty comes the dawn of many of the altruistic feelings which find best expression in some form of social service. It is good for the young people as well as the children to do this work. Those who have read Tom Brown at Rugby will remember that one of the crises in Tom's life came when he was given a younger and more delicate boy to care for. There is a great deal of misuse of younger children by older children on school grounds, and anything which can develop in young adolescents the protecting parental attitude will be a great advantage.

Need of workers.—The great handicap under which the movement for universal physical training will suffer for the next decade is the lack of trained workers. Mr. Hetherington, State director of physical training for California, estimates that 45,000 teachers are needed at once, and that there are only 3,000 students in all the physical training schools of the country. Mr. Daniel Chase, director of physical training for the State of New York, estimates that a physical director is needed for each 300 pupils in the junior and senior high schools, and for each 4,000 pupils where the individual work is done by the classroom teacher.

Departments of physical training in connection with the normals.—Each State should establish in connection with at least one of its normal schools a

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school for the training of physical directors. Several have been established during the last two years, but not enough as yet to meet the need.

The training of the regular teachers.—Probably two-thirds to three-fourths of all the children who receive instruction in physical training during the next decade will receive it from their regular teachers, and the great problem of the immediate future is to give these teachers the knowledge of games and interest in them, as well as equipment which will enable them to carry on the work. Courses in games and folk dances should be required at all normal schools, and the subject should be on the programs of all county institutes.

The work given in normal schools thus far has not been well suited to school uses, as it has consisted mostly of baseball, football, basket ball, hockey, and tennis. Few school yards have provision or space sufficient for these games. They are not games primarily of the elementary school, and can not be put into their programs. With the exception of tennis they are not continued after school days are over, and they do not meet the need of pleasurable activities for increasing leisure hours.

THE COMMUNITY CENTER.

The hours of workingmen have been greatly reduced during the last decade. The saloon, which has often been the poor man's club, has been closed. The heavy work has fallen largely to machines. All trades tend to become professions, and none of them are yielding the physical training which they did 40 or 50 years ago. We have here a new problem in training for the leisure time of adults. The school must furnish activities that will be carried on after the school years have passed. The use of the school building by adults in the evening is increasing rapidly, and there is reason to expect a continued growth. Our new school buildings are better adapted for adult use, and groups are becoming better organized. For this center to be a really efficient neighborhood capitol the various recreational features should be concentrated.

The library.—Reading is the chief form of recreation of adults, yet where libraries are in separate buildings few people use them regularly. The experience of the last 10 years has demonstrated that the best place for a branch library is a wing of a public school. With the library in this location the children use the books in their school work, and they also take home books to their parents. The branch library is a drawing card to the community center also.

The swimming pool.—Many of our new high and elementary schools, as well as most of our new college gymnasiums, are provided with swimming pools. There is greater interest in swimming, and the art is more easily acquired at the age of 10 or 11 than it is at 20 or 21. If the pool is located at the school, it can be used by the school during the day and by the community at night. A much higher efficiency can be secured than if it were in a separate building.

The auditorium.—Most of our new high schools and many of our new elementary schools have splendid auditoriums. The auditorium is essential to school spirit, and it gives the principal an opportunity to meet the entire school. Most auditoriums are used less than half an hour a day. Such an auditorium would cost $100 or more an evening, if it were rented. It is owned by the people and should be more largely used. Our best dramas, especially Shakespearean and other classic plays might well be given in the school auditorium instead of a down-town theater. In this way the company might be insured of an initial audience which would help guarantee success. Since no rent would be necessary, plays could be given in the schools at not more than half the price charged down town.

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In a school auditorium that will seat 1,000 people, a moving picture, for which a charge of 30 or 40 cents would be made at a down-town theater, can be offered at a profit for 10 cents. The great difficulty with the moving picture situation is that it is so difficult to secure good films. In order to provide suitable films for its social centers the State of North Carolina found it necessary to purchase them. This will probably be found to be the only practicable method in cities also.

The auditorium gives an opportunity also for community singing and community drama, public lectures, and public forums.

A gymnasium.—Most of our new high schools and many of our new public schools have gymnasiums, and in many cases these are used every night of the week.

The restaurant.—Most of our new schools have at least a school lunch counter or dining room, which is used during the noon hour. The community center, however, often wants spreads and light refreshments at its social gatherings. This must come either through the use of the domestic economy rooms or by keeping the school restaurant open. Light refreshments, soft drinks, and ice cream should always be available. This would be the best substitute for the saloon that could be found.

Lighting the ground at night.—Wherever playgrounds are lighted at night they always have a larger attendance in the evening during the summer months at least than during the day. With modern lighting it is possible to play adequately volley ball, basket ball, playground baseball, and tennis at night, and to have most forms of field athletics. Playgrounds were lighted in 127 cities last year. Lighting would be especially desirable in the South, as the evening is there better suited to vigorous sports than the afternoon during much of the year.

A residence.—If a real neighborhood capitol is to be built it is necessary that there should be some one in residence. There should be also a community house, which might serve as a meeting place for the Boy Scouts and Camp Fire Girls, Mothers' Clubs, and the like, and also as a residence for the workers in the community center and the playground, and for such of the teachers as wish to live there. They should be able to get their meals reasonably at the school restaurant. The school and community center might thus become a great social enterprise, similar to a settlement but having the advantage of public support and public control. The new intermediate schools of Detroit have two community club rooms.

The post office.—In one of the community centers in Washington, under the direction of Mr. Edward J. Ward, a branch post office has been organized. This has received by parcel post large quantities of vegetables and eggs directly from the country and oysters from the shore. It has done a large business.

It would often be advantageous to have a branch post office at the community center. The children could take home the mail from school.

A health center.—Many child-welfare centers have been established during the last decade in our large cities. These are usually the headquarters of the medical inspector and the school nurse of the district. To them come expectant mothers and mothers with babies for instruction as to their care and feeding. The dental clinic and the operating room for the removal of adenoids and enlarged tonsils may be here. These operations are likely to be neglected unless they are made cheap.

Our present child-welfare movement has grown largely out of the consultations for mothers which were established in Belgium in 1900. These taught mothers the necessity of nursing their children and of care in sterilizing bottles and securing pure milk where nursing was impossible.

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Instruction was given to older girls in the care of babies in 42 Massachusetts cities and 85 Pennsylvania high schools last year. Training for motherhood is a coming subject in the high schools and colleges. With such a children's clinic at the school, it should be possible to teach all older girls something of the hygiene of infancy, how to bathe and clothe the baby, and the necessity of nursing.

The day nursery.—The number of women in wage-earning occupations is increasing every year, and with present high prices it is necessary in many families for even mothers with little children to work. There are a number of day nurseries in the school system of Los Angeles, and girls from the high school do a certain amount of apprentice work in caring for these children.

Such a day nursery should be open in the evening as well as by day. In some cases it might be in the sole charge of an older girl. This would permit mothers to attend meetings at the community center.

Where the various social features are concentrated, the community center becomes a social department store; each feature in the plan increases the attendance at every other. Those who come to use the library stay to use the swimming pool and the gymnasium, and those who come for the swimming pool go also to the auditorium and the library. The residence and the restaurant are essential to the complete success of this plan. A residence is furnished for the director on all of the municipal playgrounds of Los Angeles, and on some of those in other cities. It would contribute greatly to the social success of the plan, and in some cases might be the easiest solution for board and room of substitute teachers and others just coming into the system. It would be somewhat cheaper also to build these various features together than to build them separately.

THE SUMMER VACATION.

When the movement for organized play was first started, the feeling was that it was to be primarily a movement for the summer, when school was not in session. This is still the time of greatest opportunity. Nearly all adequate school grounds in congested sections should be open in summer with some one in charge.

The voluntary summer playground, however, does not solve the problem of child idleness. Probably there is not a city in America where a voluntary play system is securing an attendance which, distributed over all the children of the city, would amount to more than 15 or 20 minutes a day. As this leaves 10 or 12 hours for the streets and vacant lots, its value is to be measured mainly in the extent to which it is able to determine ideals and to furnish games and activities which will be carried on outside of the school ground.

A play school.[4]—The great difficulty in the past with the organization of summer work by the school board has been that the whole executive force of the school department went out of existence at some time in June, and there was no one who could supervise the work. During the last two decades there has been a great increase in the activities of the summer. The tendency is for a four-term school. In most European countries the summer vacation is only five or six weeks in length.

First came regular classes for children who wished to make up grades or to do extra work, and that they might be promoted. Now there is a general tendency to open the domestic-economy and manual-training rooms, and school playgrounds for organized play and athletics more and more.

[4] For a fuller treatment of this subject, see "Recreation for teachers," by the author.

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In a summer term there should be a four-day week with not less than an hour a day given to reading, which in the lower grades might be largely story-telling or the reading of fairy tales, and in the higher grades might be largely geographical and historical stories. School and home gardens should be carried on. All the shops and industrial crafts should be kept in operation. An increased emphasis should be given to drawing and music, and to moving pictures or dramatics in the auditorium. There should be about two hours a day of organized games. The older boys should be organized into Boy Scouts and the older girls into Girl Scouts or Camp Fire Girls. Both girls and boys might gain most of the honors by which they advance to higher degrees in scouting and camp fire from the industrial work of the summer. There should be provision for a week-end camp to which both the boys and girls might go separately. There should be adequate opportunities for all-day walking trips, which would take the children not only to every point of civic and historic and industrial interest about the city but out into the country for nature study, the making of collections, and studying of points of interest in the environs.

Summer camp.—The city is a poor place for children at best during the summertime, and nearly all parents who can afford it take their children away to the country or the shore or the mountains. In a number of foreign countries there is some systematic arrangement for carrying this out. More than 30 per cent of the children were sent out from the schools of Copenhagen into the country during the summer of 1914. The same arrangement prevails in many of the German cities, and in Japan country children are often sent into the city, and city children are sent out into the country. In Brussels in 1914 there were five summer camps in connection with the school system.

It is impossible to state just how many summer camps there are in the United States, but all the larger Boy Scout troops and some of the Girl Scouts and Camp Fire Girls have camps of their own. Practically all of the larger settlements and most of the Y. M. C. A.'s also have camps. The playground systems in some of our eastern cities and in nearly all of the western cities also have summer camps. Many private camps are springing up in the mountains and at the shore, but these are extremely expensive for the most part, often charging as high as $30 or $40 a week.

The type of camp which would be most beneficial need not cost much more than it would for the children to stay at home. Each school system should secure a good-sized farm not too far out of the city and erect dormitories for a considerable number of children. There should be an arrangement so that the boys would do gardening and farm work in the forenoon and the girls do gardening and a good share of the cooking and housekeeping. If the morning were devoted to work and all the children had the afternoon free for swimming, athletics, making collections, and the like, and the evening for motion pictures, music, and games, it would be both educational and pleasant.

It might be better if each of the large city schools had a camp of its own and sent its own children to its own camp, as the settlement does. This should be simpler and cheaper for the school than for the settlement because the larger city schools have a larger clientele and the parents have great confidence in school authorities and school-teachers.

It would be desirable that a large number of children 8 years of age or more should go to such a camp and stay all summer, for it is one of the inalienable rights of childhood to see the open sky and fields occasionally. It should be in the plan of the play school that each child should have two weeks at such a camp each summer. It is an advantage for children to gain the inde-

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pendence and resourcefulness which come from being away from their parents occasionally. It is also an advantage for parents to have occasional relief from caring for their children.

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EDUCATIONAL WORK OF THE GIRL SCOUTS

LOUISE STEVENS BRYANT
EDUCATIONAL SECRETARY GIRL SCOUTS

[Advance sheets from the Biennial Survey of Education in the United States, 1918–1920]

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EDUCATIONAL WORK OF THE GIRL SCOUTS.

By LOUISE STEVENS BRYANT,
Educational Secretary, Girl Scouts.

CONTENTS.—History and growth—Activities—Methods—Organization.

Do you believe that girls should like to work at home, to cook and clean house and mind the baby? Do you believe that a girl should like to take care of her clothes and be able to make them; that she should know how to be thrifty and to conserve the family money in buying and using food and clothing; that she should play a fair game and put the group above her personal interests? Do you believe that she should value a strong healthy body above clothes and cosmetics, and rejoice in the hope of being some day the healthy mother of healthy children?

If you do, you believe in the Girl Scouts, for in this organization the girls learn all these things in such a happy way that they *like* to do them, which means that they keep on doing them.

The Girl Scouts, a national organization, is open to any girl who expresses her desire to join, and voluntarily accepts the promise and the laws. The object of the Girl Scouts is to bring to all girls the opportunity for group experience, outdoor life, and to learn through work, but more by play, to serve their community. Patterned after the Girl Guides of England, the sister organization of the Boy Scouts, the Girl Scouts have developed a method of self-government and a variety of activities that appear to be well suited to the desires of the girls, as the 89,864 scouts and the 2,500 new applicants each month testify.

HISTORY AND GROWTH.

Girl Scouts and their leaders, to the number of 89,864, were in 1920 organized in every State, and in Hawaii, Porto Rico, and Alaska. There are troops in 1,400 cities, and local councils in 162 places. This represents a tremendous growth since the founding by Mrs. Juliette Low in March, 1912, of a handful of enthusiastic "Girl Guides" in Savannah, Ga. In 1915 the growth of the movement warranted its national incorporation; so headquarters were established in Washington, D. C., and the name changed to Girl Scouts, Incorporated. In 1916 the headquarters were removed to New York, and are now located at 189 Lexington Avenue.

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From the start the organization has been nonsectarian and open to all races and nationalities. Through the International Council the Girl Scouts are affiliated with the Girl Guides of England and all parts of the British Empire, and similar organizations in other parts of the world.

At the 1920 meeting of the international conference at London, reports were received from Italy, France, Belgium, Switzerland, Poland, Norway, Sweden, Denmark, Holland, Portugal, Russia, Czechoslovakia, Brazil, Argentina, Japan, China, and Siberia, as well as from all parts of the British Empire, and the United States.

From a membership of 9,769 in January, 1918, the girl scouts grew to 89,864 in 1921, at the rate of nearly 10 to 1 in three years. The greatest relative growth was in 1918, when the membership grew fourfold. During 1919 the increase over the preceding year was more than two-thirds, while in 1920 the relative increase was one-third. The details are as shown in the accompanying table.

This growth is due to a spontaneous demand of community after community for scouting for girls, and not to deliberate propaganda on the part of the national headquarters. The reasons for it are therefore to be sought in the activities and methods themselves, which make such widespread appeal.

ACTIVITIES.

A glance through the handbook, Scouting for Girls, will show that the activities of the girl scouts center about the three interests—Home, Health, and Citizenship.

Home.—The program provides incentives for practicing woman's world-old arts by requiring an elementary proficiency in cooking, housekeeping, first aid, and the rules of healthful living for any girl scout passing beyond the Tenderfoot stage. Of the forty-odd subjects for which Proficiency Badges are given, more than one-fourth are in subjects directly related to the services of woman in the home, as mother, nurse, or home-keeper.

Growth of Girl Scout membership, Jan. 1, 1918, to Jan. 1, 1921—Active registrations.

January 1.	Officers.	Increase.	Scouts.	Increase.	Total.	Increase.
1918	1,314		8,455		9,769	
1919	3,823	2,509	36,847	28,392	40,670	30,901
1920	5,357	1,534	61,754	24,907	67,111	26,441
1921	6,839	1,482	83,025	21,271	89,864	22,753

Into this work, so often distasteful because solitary, is brought the sense of comradeship. This is effected partly by having much of

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the actual training done in groups. Another element is the public recognition and rewarding of skill in this, woman's most elementary service to the world, usually taken for granted and ignored.

The spirit of play infused into the simplest and most repetitious of household tasks banishes drudgery. "Give us, oh, give us," says Carlyle, "the man who sings at his work. He will do more in the same time, he will do it better, he will persevere longer. Wondrous is the strength of cheerfulness; altogether past comprehension its power of endurance."

While the place of most production is to-day outside the home, much of the final preparation of goods, particularly food and clothing, is still done there. So that, while the homecrafts are far from being the vital necessities they once were, they are still needed.

Handicrafts of many sorts enter into the program of the girl scouts. In camping, girls must know how to set up tents, build lean-to's, and construct fireplaces. They must also know how to make knots of various sorts to use for bandages, tying parcels, hitching, etc. Among the productive occupations in which Proficiency Badges are awarded are cooking, house planning, beekeeping, dairying and general farming, gardening, millinery, weaving, and needlework.

While production has left the home, consumption is increasingly the business of the home-keeping woman. There are few purchases, even for men's own use, which women do not have a hand in selecting. Practically the entire burden of household buying in all departments falls on the woman, who is thus in a position to learn how to spend wisely and make the most of each dollar. In France this has long been recognized, and the women of the middle classes are the buying partners and bookkeepers in their husbands' business.

The girl-scout organization encourages thrifty habits and economy in buying in all of its activities. The scout troops are self-supporting, and are expected to earn most of their equipment by means of rallies, pageants, plays, as well as by individual effort. One of the 10 scout laws is that "A girl scout is thrifty."

Health.—The girl scout learns that "a cheerful scout, a clean scout, a helpful scout is a well scout. She is the only scout that really *is prepared.*" So that health, physical and mental, is the keynote to the scout activities, which are calculated to develop the habit of health, rather than simply to give information about anatomy or physiology. Personal health is recognized by the badge of "Health Winner," given to the girl who for three months follows certain rules of living, such as eating only wholesome food, drinking plenty of water, going to bed early, exercising in the open air, and keeping clean, and who shows the result by improved posture, and by the absence of

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constipation and colds. Outdoor sports, swimming, boating, and dancing are other health-producing activities.

Of all health-promoting activities, camping is the best, and this means all stages of life in the open, from the day's hike, with one meal out of doors, to the overnight or week-end hike, and finally the real, big camp, open all summer. Girl scouts learn how to dress for outdoor living, how to walk without fatigue, and how to provide themselves with food, warmth, and shelter, so that "roughing it" does not mean being uncomfortable.

During 1920, 50 large girl-scout camps were maintained in 16 States. These are self-supporting, and as they are open for 10 weeks as a rule and accommodate about 50 girls at a time, they give an opportunity to several thousand for the best sort of holiday.

The idea is to have enough camps to give every scout the experience. To promote this work national headquarters maintains a camping section and has published a book, "Campward Ho!" which gives full directions for organizing and running large, self-supporting camps for girls.

Community health habits are quite as important as the purely personal, and the older girl scout is expected to become a "health guardian," which means that she takes an intelligent interest in the things pertaining to public health, such as playgrounds, swimming pools, school lunches, the water and milk supplies, clean streets, the disposition of waste and garbage, the registration of births, and the prevention of infant mortality. She also learns how to help in times of emergency as first aid, in sickness as home nurse, and at any time as child nurse.

A scout whose mind is filled with interesting facts about birds and animals and trees, and who is busy playing games with her companions or in making useful and beautiful things and in rendering active service to her home and community, is apt to have a healthy mind without thinking much about it. And she has a little rule for the blue times, which is "to smile and sing under all difficulties."

Citizenship.—The basic organization of the girl scouts into the self-governing unit of a patrol is in itself an excellent means of political training. Patrols and troops conduct their own meetings, and the scouts learn the elements of parliamentary law. Working together in groups, they realize the necessity for democratic decisions. They also come to have community interests of an impersonal sort. This is perhaps the greatest single contribution of the scouts toward the training of girls for citizenship. Little boys play not only together but with men and boys of all ages. The interest of baseball is not confined to any one age. The rules of the game are the same for all, and the smallest boy's judgment on the skill of the players may

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be as valid as that of the oldest "fan." Girls have had in the past no such common interests. Their games have been either solitary or in very small groups, in activities largely of a personal character. If women are to be effective in modern political society, they must have from earliest youth gregarious interests and occupations.

Among the scout activities that tend to develop this larger community sense are games, athletic sports of all kinds, including team work and competition between small, well-knit groups. Folk dancing and other forms of amusement, such as dramatics, pageants, and story-telling, serve a similar purpose because they all mean the possession of a resource not only for the right use of the girl's own leisure time, but for serving this need in the community.

METHODS.

The activities of the girl scouts are, of course, not peculiar to this organization. Every one of them is provided for elsewhere, in schools, clubs, and societies. But the way in which they are combined and coordinated about certain basic principles is peculiar to the girl scouts.

In the first place all these activities have a common motive, which is preparation for a fuller life for the individual, not only in her personal but in her social relations. It is believed that both the habits formed and the concrete information acquired contribute to the girls being ready to meet intelligently most of the situations that are likely to arise in their later life. This concept is expressed in the girl scout's motto, "Be prepared."

The method of preparation followed is that found in nature, whereby young animals and birds *play* at doing all the things they will need to do well when they are grown and must feed and fend for themselves and their babies.

The heart of the girl scouts' laws is helpfulness, and so the scouts have a slogan: "Do a good turn daily." By following this in letter and spirit, helpfulness becomes second nature.

Because the girl scouts are citizens they know and respect the meaning of the flag, and one of the first things they learn is the pledge:

"I pledge allegiance to my flag, and to the Republic for which it stands; one Nation indivisible, with liberty and justice for all."

Some observers have criticized the girl-scout organization because of its apparently military character. It is true that the girls wear a uniform of khaki and are grouped in patrols corresponding to the "fours" in the Army; that they salute and learn simple forms of drill and signaling. But the reason they do these is because the military organization happens to be the oldest form of organization in the world, and it works. It is the best way men have found

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of getting a number of persons to work together. Following directions given to a group is quite a different matter from doing something alone, and most of us need special training in this. A group of eight has been found to work the best, because it is the largest number that can be handled by a person just beginning to be a leader, and, moreover, elementary qualities of leadership seem to exist in just about the proportion of one in eight. It is probably on this account that children take so kindly to the form, rather than because of any glamor of the army, though this must be admitted as a factor. In actual practice the drill and signaling take up a very small portion of the program and are nowhere followed as ends in themselves, but only as a means to an end.

Uniform.—The uniform is simple, durable, and allows freedom of action. It is of khaki because this has been found to be the best wearing fabric and color. It is not easily torn and does not readily soil. Wearing it gives the girls a sense of belonging to a larger group, such as it is hard to get in any other way. It keeps constantly before them the fact that they represent a community to whose laws they have voluntarily subscribed, and whose honor they uphold. It is well, too, to have an impersonal costume, if for no other reason than to counteract the tendency of girls to concentrate upon their personal appearance. To have a neat, simple, useful garb is a novel experience to many an overdressed doll who has been taught to measure all worth by extravagance of appearance.

ORGANIZATION.

The outstanding feature of the girl-scout organization is its voluntary character. Among some 7,400 officers and leaders of girl scouts throughout the country in the fall of 1920, just 211 were "paid workers." This is about 3 per cent. The organization is actually a great volunteer school of citizenship in which the women of the country share with their younger sisters the results of their own experience in ideals and practical working knowledge of community living. Scout troops are organized either independently or in connection with public and private schools, churches, settlements, and other associations.

Scouts of different ages.—The original girl-scout program was designed mainly with the needs of the young adolescent in mind, and the age was fixed from 10 to 18 years. But the little girls wanted to come in, and so a separate division was made for them called the Brownies or Junior Scouts. Then the older girls and women wanted to join, and as time went on the original girl scouts grew up but not out of the scout movement, and programs are being made for Citizen Scouts who are 18 and over.

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The three age groups seem to be natural ones, and each has its own methods and activities. The Brownies are formed into packs, under the leadership of a "Brown Owl," and play games and learn self-help and how to "lend a hand" to their families. The Citizen Scouts are expected to be self-directing and to take actual part in the life of the community and, either as wage earners or service givers, to pay their way.

But the large majority of all girl scouts belong to the middle group. More girls register at 13 than at any other age. This is interesting, as it marks the age of susceptibilty to social ideas, shown also by the fact that it is the most common age of religious conversion. It is also the age of first crime. The distribution of ages at first registration is shown by the accompanying table.

The organization of the regular girl scouts is as follows:

Ages of Girl Scouts at first registration.

Ages.	Number.	Per 1,000.
6-9	440	5
10	6,059	73
11	9,130	110
12	14,857	179
13	16,434	198
14	14,276	172
15	10,707	129
16	5,810	70
17	3,496	42
Total 10-17	80,759	973
18 and over	1,826	22
Grand total	83,025	1,000

Patrol.—Eight girls form a Patrol, which is the working unit. One of them is elected patrol leader and has charge of the activities for as long as the patrol wishes. It is desirable to have each girl of a patrol serve as a leader at some time or other.

Troop.—One or more patrols constitute a Troop, which is the administrative unit recognized by the national organization. The Troop meets weekly and wherever possible at a place which "belongs" to it. When possible troops should meet outdoors. The troops are self-supporting and earn money for all equipment as well as for camps and hikes or special activities. Troops are registered with national headquarters and pay annual dues of 50 cents for each member. They also have their own local dues, generally 5 or 10 cents weekly.

Captain.—The troop is under the direction of a Captain, who must be at least 21 years of age and whose qualification as a leader of young girls is passed upon by national headquarters before she is commissioned.

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Lieutenant.—A captain may have one or more Lieutenants, who must be at least 18 years of age, and whose commissions are likewise subject to control by national headquarters. Captains and lieutenants may be organized into associations in any given locality.

Scout classes.—There are three classes of girl scouts, the youngest being the "Tenderfoot," the name given by frontiersmen to the man from the city who is not hardened to the rough life out of doors. Even the Tenderfoot, however, has to know some things, including the promise, laws, slogan, and motto; how to salute and the respect due to the flag; how to make an American flag; and how to tie at least four kinds of useful knots. She must also have earned enough money to buy some part of her scout equipment.

The "Second-class" scout has been a tenderfoot for at least one month and can pass a test of distinctly greater difficulty. This includes, under home interests, the ability to make fires in stoves and out of doors, to cook a simple dish so that it will be palatable, to set a table for two courses, to make an ordinary and a hospital bed, and to sew.

Under health interests, she must know the main rules of healthful living, her own height and weight, and their relation to the standard; some simple first-aid points such as stopping bleeding, removing speck from eye, and bandaging a sprained ankle. She must also have a variety of facts at her command that will keep her alert and interested when out of doors, such as an acquaintance with animals, birds, and plants, the use of a compass, the alphabet of a signal code; and must demonstrate her ability to observe her surroundings accurately and quickly so as to report upon them.

Under topics preparing for citizenship she must know the history of the American flag, how to prevent fire, and what to do in case of fire, and must have served her troop, church, or community in some way and earned or saved money for some personal or troop equipment.

The highest rank is that of "First-class" scout, and is to be attained only by a young person of considerable accomplishment. She must be able to find her way about city or country without any of the usual aids, using only the compass and her developed judgment of distance and direction. She must also be able to communicate and receive messages by signaling. She must have shown proficiency in home nursing, first aid, and housekeeping, and, in addition, in either child care, personal health, laundering, cooking, needlework, or gardening. She must also be an all-round outdoors person, familiar with camping and able to lead in this, or be a good skater or a naturalist or be able to swim. Not only must she know all these different things, but she must have trained a tenderfoot, started a savings account, and served her community in some tangible way.

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Proficiency badges.—After a girl scout has attained to first class there are still other worlds to conquer, as the badges she has earned on the way are only a few of the many to be worked toward. There are no less than 47 subjects in which a scout may achieve, and more are being added. Just to mention a few: A girl scout may be an artist, a beekeeper, a business woman, a craftsman, or a dancer; an electrician, a farmer, a flower finder, a horsewoman, an interpreter, a motorist; or a musician, a scribe, a swimmer, or a star gazer. The highest award given is the Golden Eaglet, which means the earning of 21 Merit Badges, of which 15 are in required subjects.

About 2,000 Merit Badges are earned a month. An analysis of the subjects shows that home nursing is the most popular, with 126 of each 1,000 earned. Laundress comes next with 97. First aid is next with 67. Needlewoman, child nurse, cook, pathfinder, health guardian, flower finder or zoologist, and home maker complete the first 10 most popular badges, with between 61 and 38 in each 1,000. The details are shown in the accompanying table.

Local councils.—Where troops are numerous it is usual to form a council composed of women and men representing all the best interests of the community: Parents, schools, religious denominations of all sorts, business, producers, women's clubs, and other social and philanthropic organizations. The council acts as the link between the girl scouts and the community. It has the same relation to the separate troops that the school board has to the schools—that is, it guides and decides upon policies and standards, interprets the scouts to the community and the community to the scouts. It does not do the executive or teaching work; that belongs to the directors, captains, lieutenants, and patrol leaders.

One function of the council is to interest public-spirited women and men, particularly artists and scientists, in girl-scout work and to get them to act as referees in awarding proficiency badges.

But wisdom is to be sought not only in large cities, where there are schools and museums, laboratories and studios. It is a poor community that does not have at least one wise old person—a farmer learned in nature's ways, a retired sailor stocked with sea lore, or a mother of men who knows life as perhaps no one else can. The wise council will know where to find these natural teachers and see that the scouts go to their schools.

Another prime function of the council is to raise funds and to make available such material equipment as camp sites, meeting places for the troops, etc. The captain should turn to the council for help in arranging and directing rallies, dances, fairs, pageants, and other devices for entertainment or securing money.

National organization.—The central governing body of the girl scouts is the national council, holding an annual convention of elected

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delegates from all local groups. The national council works through an executive board, which meets monthly and conducts national headquarters in New York. The national director is in charge of headquarters and his direct responsibility for the administration of the whole organization, with the general divisions of field, business, publication, and education, each in charge of a secretary.

The field work is administered through 14 regions, each covering several States, and in charge of a regional director, who helps in the formation of local councils, the training of captains, and acts as general supervisor and consultant for all work in the district.

Under business comes the handling of mails, all the work of the shop where uniforms, insignia, books, badges, flags, and other equipment are sold, and the distribution of material ordered by mail.

There are three classes of publications: First, a monthly journal, The American Girl. Second, pamphlets and articles for general propaganda and publicity; these are handled by the editorial and publicity staffs, respectively. Third come publications of a technical nature, like the official handbooks for scouts and officers and outlines for training courses. These form part of the work of the education department, which has general oversight of all that pertains to training for leaders and the development of standards of work, including the important feature of coordinating the girl scouts with the other educational and social organizations. Camping also forms a part of the work of the education department.

During 1919 and 1920 the following publications were issued:

Scouting for Girls: The official handbook, 576 pages.

Campward Ho: A manual for girl-scout camps, 192 pages. Designed to cover the needs of those undertaking to organize and direct large, self-supporting camps for girls.

The Blue Book of Rules for Girl Scout Captains: All official rules and regulations, 32 pages.

Training Courses: (1) Outline for 32-period course, 17 pages. (2) Introductory course, 10 periods, 16 pages.

Girl Scout Health Record: Booklet form for recording points for health winner's badge.

Miscellaneous Pamphlets: Averaging 8 pages; 128,325 copies.

Need for leaders.—The growth in membership has been twice as rapid among the scouts as it has among the officers, as may be seen in the table already given. For every scout in 1918 we have 10 in 1921. For every officer in 1918 we have but 5 in 1921. For some time to come, therefore, the energy of the national officers must be directed toward the securing of properly trained leaders.

Colleges and higher schools are responding to a gratifying extent with the introduction of training courses in scouting for girls. Within two years courses have been given at the following colleges or uni-

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versities: Adelphi, Boston, Bryn Mawr, Carnegie Institute, Cincinnati, Converse, Elmira, Hunter, Johns Hopkins, Missouri, New Rochelle, Northwestern, Pittsburg, Rochester Mechanics' Institute, Rochester University, Rockford, Simmons, Smith, Syracuse, Teachers' College, and Vassar. Also at the following higher schools: Battle Creek Normal School of Physical Education, Brooklyn Training School for Teachers, Chautauqua Institute, Chicago Normal School of Physical Education, Community Service Council of Marquette County, Mich., Manhattan Trade School for Girls, Milwaukee Normal, State Normal at Pittsburgh, Pa., Washington State Normal, and Western State Normal, Mich. The following schools and colleges are asking for courses: Chicago, Cornell, Detroit Normal, Kalamazoo, Michigan State Normal, Pennsylvania State, and Temple University.

Through cooperation with the deans of women in all parts of the country, and with the Intercollegiate Community Service Association, the college women are being influenced to take up scouting as an extra academic activity before graduation, and as a form of community service in their home towns later.

In addition to this work through existing educational bodies, many special courses are conducted in connection with the organizations of local councils.

The First National Training School for Girl Scout Officers has been conducted for four years, the last two years at Long Pond Camp in Plymouth, Mass. During the summer of 1920 special training camps were also held in connection with the councils of Greater New York, Cincinnati, and Harrisburg, with instruction given under the auspices of national headquarters. Five such camps are planned for 1921, located in Plymouth, Central Valley, in the Catskills, Lake Mohegan, N. Y., Philadelphia, and Cincinnati.

Scouting in the public schools.—Only that organization for young people can succeed which contributes directly to their chief business, which is getting an education. One reason the girl scout organization is received so cheerfully by school people is that it works into the school's own plans to a remarkable degree. Local councils have a larger representation from the public schools than from any other single agency. Scout leaders are drawn largely from the teaching force because teachers naturally have a better insight into the needs of young people than any other single group.

In a few places this interest has resulted in the gradual assimilation of scouting into the school system. At Fort Scott, Kans., this work has progressed furthest, with 90 per cent of all pupils of scout age, either boy or girl scouts. Supt. Ramsey made a most favorable report on this situation at the Cleveland meeting of the Department of Superintendence of the National Education Association 1920. Among essential features he mentioned the following:

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The boy scout executive and girl scout commissioner act as recreational directors and have charge of all the health education and vocational guidance.

A room is set aside in the Junior High School for all scout work which, however, is passed upon by a council, including persons outside of the school force.

Through glee clubs and choruses great interest in community singing and other music has been developed. The scout organization is helping to solve the dress problem for both boys and girls.

"To give the modern ideals of education would be to state the ideals of scouting." The modern teacher is increasingly well fitted to become a good scout leader.

Scouting may best be promoted through the public school, because that is the only organization that includes all the boys and girls. Moreover, because of close daily association, leaders of school troops can insure each scout being an active scout.

The school also benefits by scouting in a number of ways. Older pupils stay in school longer because of their interest in scouting than because of any other influence. "A year of work in scouting will do as much toward acquainting a teacher with the ideals of teaching as a year spent in any college or university of the country." Finally, scouting secures the interest, attention, and good will of the parents to the public schools.

Girl Scout badges earned in 1919–20.

Subject.	Number.	Per 1,000.	Subject.	Number.	Per 1,000.
1. Home nurse	2,852	126	18. Interpreter	578	25
2. Laundress	2,192	97	19. Swimmer	557	25
3. First aid	1,523	67	20. Business	424	19
4. Needlewoman	1,389	61	21. Cyclist	422	19
5. Child nurse	1,267	56	22. Gardener	393	17
6. Cook	991	44	23. Athlete	345	15
7. Pathfinder	990	44	24. Horsewoman	266	12
8. Health guardian	923	41	25. Bugler	254	11
9. Flower finder or zoologist	878	39	26. Scribe	216	10
10. Home maker	861	38	27. Telegrapher	192	8
11. Citizen	732	32	28. Motorist	190	8
12. Signaler	647	28	29. Dairy maid	190	8
13. Bird hunter	636	28	30. Farmer	187	8
14. Health winner	600	26	31. Sailor	130	6
15. Pioneer	595	26	32. Electrician	101	4
16. Artist	592	26			
17. Musician	580	26	Total	22,693	1,000

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DEPARTMENT OF THE INTERIOR
U. S. BUREAU OF EDUCATION

BULLETIN, 1921, No. 47

EDUCATION FOR HIGHWAY ENGINEERING AND HIGHWAY TRANSPORT

REPORT OF THE REGIONAL CONFERENCE
HELD AT UNIVERSITY OF PITTSBURGH
FRIDAY, NOVEMBER 26, 1920

By

PYKE JOHNSON AND WALTON C. JOHN

WASHINGTON
GOVERNMENT PRINTING OFFICE
1921

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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, D. C., October 16, 1919.

SIR: As a result of the national conference on education for highway engineering and highway transport called in Washington by the Bureau of Education on May 15, 1920, a regional conference was called at the University of Pittsburgh on November 26, 1920, under the direction of the highway and highway transport education committee.

At this conference were discussed matters of importance to engineering educators, to economists, and to the officers and teachers of elementary and high schools, both urban and rural.

In order that the proceedings of this conference may be more widely known, I recommend the publication of this report.

Respectfully submitted.

JNO. J. TIGERT,
Commissioner.

The SECRETARY OF THE INTERIOR.

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MEMBERS OF THE HIGHWAY AND HIGHWAY TRANSPORT EDUCATION COMMITTEE.

Chairman: John J. Tigert, United States Commissioner of Education.
Thos. H. MacDonald, Chief of the Bureau of Public Roads, United States Department of Agriculture.
Roy D. Chapin, president Hudson Motor Car Co., vice president National Automobile Chamber of Commerce.
Harvey S. Firestone, president Firestone Tire & Rubber Co., representing the Rubber Association of America.
F. L. Bishop, dean of School of Engineering, University of Pittsburgh, secretary of Society for the Promotion of Engineering Education.
Col. F. C. Boggs, Corps of Engineers, United States Army, War Department.
W. S. Keller, president American Association of State Highway Officials.
Director: C. J. Tilden, Willard Building, Washington, D. C.
Secretary: W. C. John, United States Bureau of Education.

MEMBERSHIP OF THE CONFERENCE.

Julia Wade Abbot, Specialist in Kindergarten Education, United States Bureau of Education, Washington, D. C.
Dr. R. R. Ambrose.
Dallas W. Armstrong, Superintendent Venango County Schools, Franklin, Pa., representing Pennsylvania State Department of Education.
R. C. Barris, Public School Principal, Pittsburgh, Pa.
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Miss Harriet Beard, Supervisor, Safety Education Department, Detroit Public Schools, Detroit, Mich.
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Philander P. Claxton, former United States Commissioner of Education, Department of the Interior, Washington, D. C.
William L. Daly, Washington editor, Class Journal Company Magazine.
B. M. Davis, Clarion, Pa., representing Clarion County teachers.
T. T. Dunn, Chairman Good Roads Committee, Chamber of Commerce, Pittsburgh, Pa.
H. E. Dyche, Professor and Head of the Department of Electrical Engineering, University of Pittsburgh, Pittsburgh, Pa.
Russell T. Egner, Specialist in Visual Education, Extension Division, University of Pittsburgh, Pittsburgh, Pa.
Ernest Farr, Director Firestone-Ship-by-Truck Bureau, Akron, Ohio.
Angus Ferguson, Grafton, W. Va., Resident Engineer, Barbour County.
Harvey S. Firestone, President Firestone Tire and Rubber Co., Akron, Ohio.

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George H. Follows, Professor of Commercial Engineering, Carnegie Institute of Technology, Pittsburgh, Pa.
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Frank M. Leavitt, Associate Superintendent of Public Schools, Pittsburgh, Pa.
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J. M. Uhler, Superintendent of Schools, Conemaugh, Pa.
John Weber, Associate Professor of Mechanical Engineering, University of Pittsburgh, Pittsburgh, Pa.
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Paul C. Wolff, Secretary Pennsylvania Motor Federation, Pittsburgh, Pa.
L. C. McCandliss, Assistant Professor of Civil Engineering, University of Pittsburgh, Pittsburgh, Pa.

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EDUCATION FOR HIGHWAY ENGINEERING AND HIGHWAY TRANSPORT.

INTRODUCTION.

At the meeting of the first national conference on highway and highway-transport education called in Washington, D. C., on May 15, 1920, by the former Commissioner of Education, Dr. P. P. Claxton, it was voted by the conference committee on highway transport education:

This conference strongly recommends that universities and colleges offer courses in highway transport as their facilities will permit, and that at least 10 universities, located in different geographical sections of the United States, offer short-period advanced courses covering the various phases of highway transport, and 4-year courses in highway transport engineering or highway transport options in 4-year collegiate courses.

That the underlying principles of highways and highway transport, as well as the rules of the road, be taught in the grammar schools and high schools of the Nation.

Among the first institutions to respond to the call of the Washington conference was the University of Pittsburgh, which at that time was completing a special highway-transport laboratory, in which the work in both highway engineering and highway transport is carried on under the same roof.

Among those invited to participate in this conference were the members of the Educational Association of Western Pennsylvania and the Pittsburgh Teachers' Institute, and about 2,000 teachers were present from these organizations.

The purpose of this report is twofold: First, to stimulate greater interest of colleges and schools of engineering in the studies of education for highway engineering and highway transport; second, to assist teachers in the grammar grades and high schools in teaching safety as well as the relation of our highways to the economic development of the country; and, third, to encourage rural school development by means of improved methods of transportation of students.

RELATION OF HIGHWAY CONSTRUCTION TO CIVILIZATION.

By Roy D. Chapin, *Vice President National Automobile Chamber of Commerce.*

Our duty to civilization to-day is to encourage the construction and use of the best and largest possible number of roads and highways in this country, so that we may encourage the highest type of civilization attainable in America. We should make these routes useful and easy to travel, so that our people can move from one section to another easily and frequently, and so that every citizen may come to think not in terms of his own locality, but in terms of the Nation. As we develop highways we shall break down sectionalism.

There are 8,000,000 passenger motor cars in this country to-day, and figuring on a basis of a little less than 4 people per car, a little over 30,000,000 people ride over the highways to-day, so that highways touch close home to many people. The passenger-car mileage in automobiles is somewhere between 40 and 50 per cent higher than the passenger mileage of the railroad companies.

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One point is preeminent in highway and highway-transport engineering, and that is the economic side of the matter. We are concerned not only with expenditure of vast sums of money on the highways but also with the vehicles that pass over the highways, and it is our duty to see that money appropriated for highways is wisely expended. The largest sum that is appropriated for public improvement is annually going to highways; it touches your pocketbook and the pocketbook of your family, and it is our duty to see that our boys understand better than we do what a good highway means and whether they are going to get a good highway when the various authorities build it.

In Detroit, for example, we are spending millions of dollars in trying to open arteries of traffic through the down-town centers. If we do not help others to get a true vision of this great development, the cost of millions to-day will be turned into tens of millions in a few years.

We must also show the effect of highways on the cost of housing. Living has been cheaper in Detroit during the last two or three years because a cheap car enables a man to own a home in the suburbs, where rent is cheaper.

Again, highway transport has created consolidated schools. The little one or two room schoolhouse was usually situated at a crossroads, and the attendance was variable, depending upon the weather and the roads. To-day many States are building consolidated schools, with motor busses bringing children in and taking them back.

We must have highway systems. These must be laid out intelligently, years ahead of time. Through routes in one State must connect with routes of other States; county routes must connect with other county routes; and township routes with other township routes, so that in the end we shall have a network of highways, not as we have now in almost every State of the Union, isolated pieces of highway and great stretches of bad road or a good road connecting with a bad road or stretches of bad road connecting good roads.

Next to the home, our biggest daily contact is with the highway. We follow it to work. It is impossible to escape it. The average citizen complains about his road, yet he little understands his relationship to it. It is the duty of education to interpret that relationship. The Nation has a great duty in the expenditure of millions of dollars for highway transport, and it will be much more difficult to get funds in the next 5 or 10 years to construct these roads if our educators do not interpret that relationship.

Then, as to traffic rules: The teachers in lower grades can teach the meaning of the rules. If there is any one thing that every man wants to do, it is to save life. A true inculcation of those rules into the minds of the children as they come to school is going to cut down very measurably the number of accidents on the streets. Traffic games and highway games in the schools will bring the children to a realization of what highway transport really means and their relation to it. In the high schools it seems wise to teach the economic value of the highways and highway transport. Every high-school student to-day is a potential voter. The students of to-day are going to vote to-morrow for many miles of highway construction at an expenditure of many millions of dollars. They should know the subject so that they can vote these sums intelligently. Colleges should train highway engineers as well as highway-transport engineers.

DEVELOPMENT AND USE OF AMERICAN HIGHWAYS.

By S. B. McCormick, *Chancellor, University of Pittsburgh.*

It is interesting to consider the development of highways in America, and particularly in our Commonwealth of Pennsylvania. The people of Pennsylvania have watched the progress of highways, canals, and railroads. The canals

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came after the highway between Philadelphia and Pittsburgh, and shortly after the canal the railroad came on, reaching Pittsburgh in 1852. About 1817 the pike was completed, and it was a busy highway from Philadelphia to Pittsburgh, the national pike also following its route to Washington. Now we have reached a period in our highway construction when it is to be looked upon not as a method of solving an immediate problem, but as the most prominent thing in America.

This, therefore, is a matter which demands the greatest study and the best intellect that we have, and it is a hopeful sign that you are going about it so as to ascertain just what traffic must be carried over these highways in order to find out just exactly what highways you have to construct. And after you determine what highways you have to construct, you may have to decide upon the other question, as to what kind of vehicles, in weight, and so forth, are to go over it.

It is a good thing, as Mr. Chapin has indicated, to enlist all kinds of people in the highway problem. It is a disgrace that so many people are injured and killed in developing this new instrument of transportation. This evil must be remedied. People do not realize that we have in this country just as many engineers as there are automobiles, running not upon a track like a locomotive, but upon highways. The drivers do not realize the tremendous power of the thing they are attempting to control.

In our schools and colleges, and everywhere that people can be brought together, this should be taught, because all of this is a part of one great plan; and when the time comes when from the Atlantic to the Pacific and from Canada to the Gulf we shall have good roads, roads that will be built in such a way as to endure, we shall bring about that which will guarantee more effectively than anything else the greatness and prosperity of our Nation.

Again, if you have highways and automobile trucks, you have a guaranty that no group of men can stand up before the American people and threaten to starve them unless their demands are granted. I am speaking altogether without any bias, for sometimes men have grievances which ought to be righted, and sometimes they have not, but whether they have or not the power of killing people by starvation is too much for any group of men, and we guarantee the safety and security of the Nation itself just in the measure in which we construct these highways.

This seems to me the most vitally important matter of a material kind before the American people to-day.

HIGHWAY CONSTRUCTION IN PENNSYLVANIA.

By H. E. Hilts, *Principal Assistant Chief Engineer, State Highway Department.*

In Pennsylvania we have laid out, as you know, what we call a primary system of roads connecting the county seats. We do not take the individual sections of that primary system haphazard, but have laid out the full program year by year, so that when we get through spending this hundred to a hundred and twenty-five millions in four or five years we shall have a complete system of highways, selecting first the sections which are in most serious shape now. In order to accomplish this, we have to consider man power. We now have over 800 inspectors from the universities working for us on the various construction jobs. We must depend upon the universities to turn out year by year men who will be acceptable to us.

In the State highway department we have an automobile division, through which we collect our money. Those moneys are spent for maintenance. We have

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a maintenance division, under a maintenance engineer and the commissioner, and each county has a representative in the person of a susperintendent, who is in many cases a technically trained man—an engineer—and who has his caretakers on the main primary trunk lines. The construction division handles the expenditure of moneys raised by bond issues, or direct appropriations of the legislature, and of the various bond issues authorized by the counties, many of which look to us to superintend the construction of their highways as well as to check up their plans.

We have found it very important to establish a testing laboratory. We have now about 50 men in this work, 10 stationed in Pittsburgh, to see that the materials we get for our roads are suitable when delivered. Our inspectors on the projects do the rest.

We look upon each road or group as a separate problem. We send our corps in the field and endeavor to make relocations where they are justified. We estimate an increase of 100 or 200 per cent in motor traffic after the roadway is built. We endeavor to find the cost of added rise and fall, of added curvature, and where we would be justified in shortening the distance between terminal points, or in trying to find lower loops in the mountains, so that where we have costs of $100,000 to $125,000 a mile we can show why we are spending the money.

In other words, we talk from an engineering standpoint, dissect all the items of cost per mile of road, and satisfy ourselves whether those costs are justified. We have problems now in our large traffic centers in detouring trunk lines around the cities. We have done that with the railroads for years, and we are now going to do it with the highways. A great many people going from Washington to New York would be glad to obviate the necessity of going through Philadelphia, and we shall be compelled to construct roads probably sooner than we think to handle through traffic. To save three-quarters of an hour in a 4-hour trip is an item worth while.

I figured roughly one morning what our justifiable expenditures might be for a primary system. Calculating that 75 per cent of the traffic would go on 25 per cent of the roads, I found that $35,000,000 a year was a very conservative estimate of saving on tires, on general repairs, and on oil and gas in automobiles. That is just a saving in dollars and cents for the operation of the vehicle over the road. It does not take into account any of those things that we look upon in an educational way. Thirty-five million dollars! Multiply that by 20, and you have the capitalization value.

Finally, I want to impress upon all of you that, in order to carry out this work properly, the educational situation must be handled so that the highway department can get a supply of trained men, with the ability to reach the top in a short time.

FINANCIAL SIDE OF HIGHWAY CONSTRUCTION.

By A. G. Batchelder, *Executive Chairman, American Automobile Association.*

There is one thing which I think is fundamental in this subject, namely, the economic side of it. It is a big task to get the money to begin with.

There was a time when we secured funds for highway improvements from counties, but first there had to be a State appropriation in order to induce the county to move in the matter. When the motor vehicle came on the scene we found that the county unit was too small, and so we realized that we must use a larger unit of taxation, namely, the State, which really meant nothing more nor less than that the richest counties of the State, through the State

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treasury, built roads across the poor counties which were not able to build roads for themselves.

Finally, the Federal Government contributed money, and now in the same way that the richer counties helped the poor counties in the State the rich States help the poor States. Our idea was that those Federal dollars would contribute to a State, and that the State should contribute to the counties, and especially the poor counties. Unfortunately, in carrying out the national plan many of the States have not functioned as they should. As a result we have not secured the highways we hoped for. Federal money should not be spent on roads unless they have some national characteristic.

THE WASHINGTON CONFERENCE ON EDUCATION FOR HIGHWAY TRANSPORT.

By P. P. CLAXTON, *United States Commissioner of Education.*

Last spring there was held in Washington, at my request, a conference on education for highway engineering and for highway transport. That conference was attended by representative teachers of engineering in the colleges and universities, by highway commissioners, and others interested in the building and promotion of highways especially from the technical side, and those gentlemen who had to do with the making of automobiles, auto trucks, and auto transportation. The conference lasted two days, and out of it grew a strengthening of the convictions that we each had of the importance of this kind of education. I think we agreed that we had come to a new era in transportation, and that probably in the next 20 years we will spend for the building of highways—hard-surface highways—as much as or more than we ever spent in a like time for the building of railroads. That means that we shall spend 10, 15, or 20 billions of dollars for the building of highways; that those highways will be of a kind different from the highways of the past, and that they will require knowledge and application of technical principles.

The highways should be built by properly equipped engineers, who understand grading, making curves, and other things far different from what they have been in the past, to meet the new condition of heavy trucks running at high speed.

Next comes the proper preparation of the roadbed, so that it will not yield to rain or frost, or give way under the surface, because a road is a thing that has to be left out over night regardless of the weather. You can not take it in and shelter it and care for it, and you have to take care of the weight on it and the impact of rapidly moving freight of many tons. All the roads, probably, in existence at the time this conference was held were practically out of date. We found that the hard surface roads made for light-draft automobiles, before heavy trucks were used much, were giving way under the heavy work of the truck, so that we decided that for the balance of these thousands and scores of thousands of miles of highways to be built there will be necessary a different kind of training from that which the ordinary engineer has had.

It came out in the Washington conference that highways are built for certain kinds of transportation; certain kinds of men are going to go over them, not horses and buggies, but automobiles and trucks, both of which are new inventions, and probably neither one of them yet perfected, especially the truck. And for the making of auto trucks, tires, and machinery there is necessary another kind of engineering involving the principles of mechanics. It is a new thing, and so far we are applying old knowledge by the hit-and-miss method.

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So we need schools and higher institutions of learning to furnish the means of training men for this kind of work, and for the organization of transport over the road. We decided it would be a good thing to appoint an executive committee, which has held a number of meetings, and which has subdivided itself. Some of the committees have held meetings, and there is some hope now that there will be a definite organization by which study of these problems can be promoted, if not as effectively as they should be by the United States Government, yet effectively coordinating the study of that knowledge that we now have.

RELATION OF THE SCHOOLS TO THE HIGHWAY PROBLEM.

By THOMAS H. MACDONALD, *Chief United States Bureau of Public Roads.*

It is not expected that every man will become a builder of highways. Nor is it expected that every man will become an operator of motor vehicles. But there is not a citizen whose daily life will not be more and more influenced by the operation of motor vehicles over the public highways.

The tremendous importance which the highways in their relation to transportation have attained, the great problems which are necessarily connected with their building and maintenance, the operation of traffic over them, and the economic problems attendant upon these two, including the distribution of financial responsibility and the values to the communities which accrue from highway improvement, call for study and research. Particular attention is directed to the fact that these problems have come upon us within a very limited time. It has not been a slow development, giving us time to readjust ourselves. There has been little time for preparation, and we are now faced with the necessity of a broad educational program through which we must reach many classes if the objective of efficient and economical use and extension of our new transportation facilities is to be gained.

Upon our school system will to a large extent fall the responsibility of providing education of two very different kinds—the education of the public served and the education of the public servant. In this country little attention has been given to training young men for the public service. In fact, it is not uncommon for men to graduate from the universities without any adequate knowledge of the organization of the smaller units of the civil government in their own communities.

Many men will be needed in the highway improvement and transport program. If they obtain an appreciation of what real public service means, not only in the higher capacities but in the positions which control the affairs of the local communities, there must be implanted by the schools, beginning with the boys and girls in the lower grades, an interest in the development of the highways in their own communities. If they are taught who is responsible for their care, if their attention is called to the safe usage of the highways, they will have a much better background for higher training and their interest may be enlisted to the point that when it comes time to choose a college career they will take up a study of the technical branches which are necessary to an understanding of the science of highway building and highway transport.

A large number of technical graduates will need to be trained each year if the public is to be served by properly trained men. This is true not only in the Federal and State road programs, but in those of the cities, counties, and other governmental divisions.

It is estimated that the number of men who would be normally absorbed by the State and Federal highway departments alone each year would amount to

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practically the entire number of graduates of civil engineering courses in the country. It is absolutely certain that only a small proportion of these men, under present conditions, will enter the public service because of the larger inducements elsewhere.

The second most important need of education in highway development is that of bringing to the citizenship through the agencies of the schools a better knowledge of the service demands which the highways must fulfill. It is perhaps too much to expect that the understanding will become general in a short period of the tremendous increases in the uses of the highways which have come in the past three years. It is conservatively estimated that in the agricultural communities the vehicle's mile use of the public roads has increased at least 500 per cent, while contiguous to the more thickly populated areas the increase is at least 1,000 per cent. The increased use is not alone in the number of vehicles but in the weights and speeds of the traffic units. Size and speed are the destroying agents, and our road systems which were built for very much smaller loads are showing, in many cases, failures.

There is too generally prevalent a feeling that the highway builders of the past have failed. Because some highways are not now satisfactorily carrying the tremendous traffic which has suddenly come upon them there is a tendency to criticize the men in the public service who were responsible for the construction of these roads. An impartial student of the records will undoubtedly find that if the roads were honestly and conscientiously built under the direction of a competent engineer, they are giving as good service as could possibly be expected under the changed conditions and that the construction planned by the engineer is much ahead of that which the public thought was necessary at the time.

The fact has been true of the highway engineer as of many other professions—the men who have pointed the way and who have accomplished the outstanding results have done so more often with the opposition of the public whom they serve than with their cooperation. Here is a prime function of the schools. There must be implanted in the minds of the boys and girls who are now in the lower grades a different attitude toward the governmental agencies which the public has set up to serve itself.

We need men trained in the proper expenditure of the great sums which will be appropriated for road improvement. We need men educated not only in the technical requirements of road building, but we need a larger citizenship which is more conversant with the way in which its own affairs are managed, so that it will intelligently select the men who can and will administer these offices in the public interests.

In conclusion, therefore, the teacher of to-day, who is concerned with the great questions so closely affecting the welfare and advancement of the public as a whole, will take the opportunity to implant in the minds of his students, whether these students are of the lower or higher grades, a knowledge of the service which the public needs from its young men, and will direct the attention of those who seem especially qualified to the opportunities offered for a splendid public career in the construction and maintenance of the public highways.

The need of education in highway development lies in two directions—the training of more men to carry on the actual work and the training generally of the public to the tremendous importance of the work which must be done and the economic value that will be gained by the public through the increased transportation facilities now made possible by the combination of the improved highway and the motor vehicle. These problems are educational. They belong to the teacher.

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GOOD ROADS ESSENTIAL TO GOOD RURAL SCHOOLS.

By DALLAS W. ARMSTRONG, *Superintendent of Schools, Venango County, Pa.*

It seems to me that the road problem and the rural school problem are identical. The consolidation of the rural schools in the way that they should be consolidated is practically impossible in many sections of Pennsylvania until we have some road improvement. The cost of these schools is a question before the people of the State, just as is the cost of the construction of the roads. The State must bring these schools together and give the boys and girls of the country and agricultural districts an education that will help them on the farm, and will give them some of the advantages that the boys and girls of the cities have. While these schools will cost more, they will give much more to the boys and girls of the community in proportion to the cost. Poor roads delay this program; in fact, they almost prevent it. For example, it is almost impossible to drive an auto bus during three or four months in the year in my county.

Good roads and the economy of good roads should be introduced as a subdivision of the study of thrift. We have boys and girls in a certain township in Venango County 10 or 12 miles away from school, and it is impossible to get them to school with the present roads. The township plans to build a high school this year; the boys and girls are demanding high-school privileges. If those boys and girls could see the opportunities that we could give to country children through consolidated schools, I am sure they would use their influence with their parents.

THE SOCIAL VALUE OF HIGHWAYS.

By P. P. CLAXTON, *United States Commissioner of Education.*

I am going to speak first on the relation of the highway and good roads to education, particularly from the standpoint of the consolidated schools.

Originally our schools had a very small function to perform. Boys and girls in our pioneer homes had many educational agencies in connection with their daily tasks that the modern boy and girl do not have.

The home was a little kingdom to itself. The home manufactured the clothing and food. For the older boy the school did a very small part of the supplementary educational work. It merely gave the means and tools of education. There was opportunity to apply the principles which they thus got back into their home life. The modern school must give those experiences that the boys obtained in the primitive way in the primitive home. For that reason the one-teacher school in the country breaks down. In the one-room country school in Pennsylvania—and there are many thousands of them—one teacher teaches all subjects; she teaches all grades, and all ages from 6 to 18 or more. She is her own superintendent, her own health inspector, janitor, school nurse, besides being the representative of education and culture in the community. No person yet has been able enough to do the work as it should be done.

Hence the importance in this State of consolidated schools. In one county which we have recently studied, out of 179 school buildings, 147 are one-room schools, and a careful survey shows that if there were good roads in that county 29 schools would be sufficient. One-third of the number of teachers in one-room schools might actually be dismissed, and there would not be any more work on the remaining teachers.

Another reason for good roads in the community is that of the church. The country church largely breaks down, not because the country people are not religious, but because it is not easy to go to church. By bringing the people together to the country church by means of good roads, we might add much to

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the cause of right living. I am sure that every good teacher would favor it. They preach a Heaven with roads paved with gold. We would like to have paved roads in the preparation for Heaven.

Let us take up the matter of community organization. A part of school work, in addition to the regular class work, is the bringing together of the grown-up people for acquaintance. friendship, instruction, discussion, and it may be for cooperation. Wherever a schoolhouse is built, especially a consolidated school, almost invariably there is a room provided for the adults to meet in, assembly halls with library, moving pictures, stereopticons, etc. But it is practically impossible to bring the people together in any large way unless there are better means of travel.

For that reason we are interested in the building of the highway as an educational project for the country. Modern education does not stop with the elementary school; it continues and becomes more important in the period of later adolescence and the earlier manhood and womanhood.

At this morning's conference it was said that teachers should be informed about highways. Country schools should teach travel and transport as well as other subjects, so that the pupil may understand his own life and his own work. If you leave him in a mist of darkness, without knowledge of his own community, his own people, and those near by, the chances are he will never be able to break through that mist and use the light you try to give him.

No doubt you will be asked to help in this State in making people understand the highway problem in its relationship to the transportation of their products and goods in their immediate community, because we are going to spend probably in the next 20 years 15 or 20 billion dollars in building highways and auto vehicles for serving communities in the way I have suggested—more than we ever spent in a lifetime on the railroads of the United States. Consequently, there will be opportunities for thousands of young men to work and serve their country in developing our highways and transport systems.

Chancellor McCormick. The Whisky Rebellion in Western Pennsylvania a century and a quarter or more ago occurred because there were not highways by which to send the products of this western part of the country to the East. It was easier to transport whisky than the grain. To-day thousands are starving in China with food in other parts of China which can not be gotten to them. So in Russia, and in other parts of the world.

It is, therefore, important that all teachers attempt to understand the significance of highways in order that they may bring the subject home to their students.

Along with this matter of highway construction and highway transport is the matter of safety. Perhaps at this time in our history one of the things of which we ought to be ashamed is the number of lives that are paid as the price of improved methods of transportation. The safety-first idea is one that, along with this matter of highway construction, ought to engage the interest and have a part of the energy of every public-school teacher.

METHODS OF TEACHING ACCIDENT PREVENTION IN DETROIT.

By Harriet Beard,

Supervisor of Safety Education, Detroit Public Schools.

There are a few things that I should like to recommend to aid in avoiding accidents to school children. There should be proper traffic regulations along all highways to safeguard both the driver and the pedestrian; and a rigid,

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impartial enforcement of these regulations is very important, if we are to safeguard the lives of the people, especially the children.

For the prevention of these accidents, the only method that will be effective is education of grown people and of children. The education of children in the proper use and value of the highways is the thing most to be urged in these days. It is hard to educate grown people in new ways. We should begin with the children; teach them how to travel and how to live, especially in a big city.

In Detroit we have a very serious situation in regard to accidents. There are very many reasons for it; all traffic is on one level, which causes a great many accidents in a city of a million inhabitants; the streets converge to one center, which makes very heavy traffic downtown.

A check was made in 1918 at Michigan and Woodward Avenues, in the heart of the city, and from the hour of 7 in the morning to 7 in the evening, 27,983 automobiles passed that intersection. I don't know what the number is now, but I think at least 10 times as many.

There is a very tolerant attitude toward reckless driving that causes many accidents. During the 12 months ending August 1, 1919, when the Safety Department was organized, 1,097 accidents to the school children occurred, 96 being fatal. That appalling number led the board of education to insist that something be done; so that is how the safety-first movement was organized as an experiment.

There was really nothing to go by; we had no textbooks. We had only the records from the police department of the accidents to school children to study, and with that start we began to build up a safety department.

The police and fire departments lend all possible cooperation. They are anxious for us to help them and we are anxious to do so. The police send me numerous and full reports of accidents, giving the age, the circumstances, whether the accident took place at the intersection of the streets, and all details. I have found out a great many things that happen to children between the ages of 6 and 7, and to boys 12, 13, and 14, when they begin to use bicycles, and such data as that, and we have built up a course of study based on the conditions we have found to exist. We have inquired in the schools to see where the children's interests lie. We started with their drawings, and asked them to draw pictures of safety on the street. The results were very interesting. They made the drawing paper with the four corners representing the streets, and they would represent policemen and children trying to cross the streets. Some even put in an automobile or two, and one boy had a large round thing shown at the back of the automobile and when the teacher asked what that was he said that was an extra tire.

The most interesting thing was that all of the policemen were in uniform. Some of the children didn't know enough to put arms on the people crossing the street but they put uniforms on the policemen and put buttons on the coat and a badge. We saw that the children understood that there is such a thing as a uniform. We talked about public service; how the uniform differs from the clothing of other people and the meaning of the uniform and that it involved some responsibility, and it also involved respect for the uniform.

We tried, with traffic games, to show what their ideas and interests were with regard to traffic on the street. We started with the aisle in the front of the room. That was the main avenue, and all the narrow aisles were side streets. We drew marks where they should cross. Some of the children were policemen, others were pedestrians.

They are all learning what it means to cross the streets. The children who represent the policeman have a very different idea of the policeman than they would have had if they had not been policemen themselves.

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A little boy named Thaddeus is policeman at one corner. They have a boy representing the speeder, who has an automobile 3 or 4 feet long, and he comes dashing across the stage and knocks down three or four children who have been jay-walking, and Thaddeus picks up these children and tells them how important it is to be careful, and to pay strict attention about their walking. He also gives some admonition to the speeder, which, I think, is very necessary.

We have tried the Boy Scouts. I visited a school this week where they have 20 Boy Scouts, and they take turns, one scout one week and one another week. They stand at the corner nearest the school, and take the children across the street, and at times hold up the traffic.

The teachers also find that the introduction of work of this kind is not a burden, and I think that is something we must consider, because nowadays teachers have so many burdens on them that I think we should be very, very careful in what we ask the teachers to undertake.

The children are organizing safety clubs and wear safety buttons that the police department furnishes. We have had competition between the schools in keeping down the number of accidents, and competition between public and parochial schools as to how many children from each are injured, and each tries to reduce the number. We try to keep in contact with them. If they have ideas, we like to have them.

We have issued a small book that has suggestions as to the work and the methods that can be used. The teachers don't take that as an additional subject, but give it to children through their drawing or through their dramatization or their English; even in their arithmetic they learn about the city departments, because this work has developed not only in accident study, but in fire, first aid in emergencies, and the first principles of civics.

We also have a course of training for teachers in the Teachers' College in accident prevention, and some teachers are interested enough to want to specialize in it.

If the police department have some idea that they wish to give to the children, if there are special dangers that arise, we try to incorporate that in the course for the children. For instance, a few years ago, at the time when the days were getting shorter, the children were running out on the streets in the dusk. The drivers could not see them, and, consequently, many accidents occurred. The secretary of the school board asked, "Isn't there some way you can impress on the children that it is not safe to run out unless they carry a newspaper or something white that will show when they cross the streets in the dusk?" We gave them some lessons in protective coloring, showing how birds in nature have protective coloring, and in that way a great many of them got the idea, and when they went out in the dusk, going to the grocery just before supper, they would carry a newspaper, or wear something light, so that they could be more easily seen in the darkness.

The Boy Scouts help us very much in our work and we help them. We help them to demonstrate the principles of first aid in their Boy Scout Manual, and, of course, the children feel if the Boy Scouts can teach these things, they want to join, and the girls want to join the Fireside Group. We are planning to have Boy Scouts for every school. If we can have the troops meet right in the school we feel it is going to be of great help to the school.

We have had community evenings, where the parents and the department and the board of education cooperate. We furnish some feature that the children have been doing in the school. It is always interesting to the parents to see these things. We have one or two community features, dramatization

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or music, or whatever is easiest to give, and then have a safety talk, and a moving picture showing how accidents occur, and another moving picture to attract the people. There is no admission charge and the thing is very satisfactory. It was quite interesting to see how the children would bring the parents who had never been in the school before. In that way we have the parents see what a splendid work the children are doing, and they have their children at school every day on time.

You may be interested in the results of one year of our work, which was largely experimental. During the year before we had 96 school children killed, and many more younger ones; the 96 were children from 6 to 18. During the 12 months that ended with the 1st of September, 1920, after this work was instituted, we had 48, which was a saving of 50 per cent of those lives, and, instead of a total of 1,097 accidents to the school children of the city, we had 589. That is 589 too many, but still it is a reduction of almost 50 per cent the first year. So we feel in Detroit that education along these lines is well worth while.

REPORT OF THE HIGHWAY TRANSPORT COMMITTEE.

1. This committee strongly recommends that universities and colleges offer a required 3-hour course throughout one year in highway transport and highway engineering as a part of their civil engineering courses, and that not more than 10 universities located in different geographical sections of the United States offer short-period advanced courses covering the various phases of highway engineering and highway transport, and a 4-year course in highway transport engineering or highway transport and highway engineering option in 4-year collegiate or technical course.

2. It is the opinion of this committee that the textbooks in high-school economics should be so revised as to treat the subject of transportation in a broader and more complete manner and to include more recent developments in highway and waterway transportation as a means of assisting other modes of transportation now in use.

3. The committee recommends very strongly the revision in textbooks of civics, particularly as they refer to highway transport, and further recommends that those in authority in the secondary and grade schools make strenuous endeavors to satisfy the need in all phases of highway transport as it involves both safety and economics.

4. The committee suggests that the time is now opportune for the Bureau of Education in Washington to consider stimulating interest in the field of highway engineering and highway transport and to consider that the high-school graduate should be helped in his selection of a vocation in life.

H. E. HILTS, *Chairman.*

REPORT OF THE VOCATIONAL EDUCATION COMMITTEE.

This committee discusses:

(1) The need of vocational training for—
  (*a*) Foremen, road supervisors.
  (*b*) Chauffeurs and auto mechanics.
(2) Where and how the vocational training required for these positions may best be given.

Training for foremen and road supervisors.—The discussion tended to show that at present, to a very large degree, vocational competence in the positions of foremen and road supervisors is reached as a result of actual experience on

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DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

BULLETIN, 1921, No. 48

EDUCATIONAL DIRECTORY

1921-1922

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James O. Adams	Business manager	Do.
District of Columbia:		
F. W. Ballou	Superintendent of schools	Washington:
Stephen E. Kramer	Assistant superintendent	Do.
Garnet C. Wilkinson	.....do	Do.
Florida:		
W. N. Sheats	State superintendent of public instruction	Tallahassee.
J. C. Compton	Chief clerk	Do.
R. L. Turner	State inspector of rural schools	Inverness.
M. P. Geiger	.....do	
W. S. Cawthon	State high school-inspector	Gainesville.
J. H. Brinson	State agent for rural Negro schools	Jacksonville.
Georgia:		
M. L. Brittain	State superintendent of schools	Atlanta.
I. S. Smith	State supervisor of rural schools (North Georgia)	Reidsville.
Geo. D. Godard	State supervisor of rural schools (South Georgia)	Milner.
J. O. Martin	State supervisor of rural schools (Middle Georgia)	Covington.
M. L. Duggan	Rural-school agent	Atlanta.
Joseph S. Stewart	State high-school inspector (University of Georgia)	Athens.
E. A. Pound	State supervisor of high schools	Atlanta.
Tom Wisdom	State school auditor	Chipley.
Walter B. Hill	Special supervisor (for Negroes)	Atlanta.
Paul Chapman	Agricultural supervisor	Athens.
L. M. Sheffer	Assistant agricultural supervisor	Do.
J. F. Cannon	Trade and industrial supervisor	Atlanta.
W. M. MacLaurine	Assistant trade and industrial supervisor	Do.
Epsie Campbell	Home economics supervisor	Athens.
Hawaii:		
Vaughan MacCaughey	Superintendent of public instruction	Honolulu.
T. H. Gibson	Deputy superintendent	Do.
Daisy B. P. Smith	Secretary	Do.
Mrs. L. L. McCandless	Commissioner of public instruction	Do.
Elsie H. Wilcox	.....do	Libue Kauai.
D. C. Lindsay	.....do	Kahului Maui.
Samuel P. Woods	.....do	Kohala.
W. H. Smith	.....do	Hilo.
Ken C. Bryan	Territorial director of industrial education	Honolulu.
Mrs. Jane Otremba	Territorial director of domestic science and home making.	Do.
Mrs. Nancy D. Andrew	Territorial director of public school music	Do.
Mrs. Esther W. Kelle	Director of Hawaiian handicrafts	Do.
F. W. Beckley	Director of Hawaiian history and language	Do.
Idaho:		
Ethel E. Redfield	State superintendent of public instruction	Boise.
Retta F. Martin	Assistant State superintendent	Do
Enoch A. Bryan	Commissioner of education	Do.
Melvin S. Lewis	Director of vocational education	Do.
Maragaret Sweet	State rural school supervisor	Lewiston.
Katheryn Burggraf	.....do	Albion.
Austin C. Price	Business agent and auditor	Boise.
Carrie E. Plummer	Certification clerk	Do.
Illinois:		
Francis G. Blair	State superintendent of public instruction	Springfield.
John C. Hanna	Supervisor of high schools	Do.
Harry M. Thrasher	.....do	Do.
U. J. Hoffman	Supervisor of elementary schools	Do.
W. S. Booth	.....do	Do.
Carl Colvin	Supervisor of vocational agriculture	Do.
J. E. Hill	Assistant supervisor of vocational agriculture	Do.
Jesse F. Kolb	Acting supervisor of trades and industries	Do.
J. E. Fults	Assisant supervisor of trades and industries	Do.
Cora I. Davis	Supervisor of home economics	Do.
Elizabeth M. Beyer	Assistant supervisor of home economics	Do.
Charles H. Saylor	Assistant supervisor of industrial rehabilitation	Do.
J. C. Thompson	School law	Do.
H. T. Swift	Chief Clerk	Do.
A. L. Whittenberg	Secretary of teachers' examining board	Do.
R. O. Clarida	Secretary of teachers' pension board.	Do.
Indiana:		
Benjamin J. Burris	State superintendent of public instruction	Indianapolis.
John S. Hubbard	Deputy superintedent	Do.
Robert K. Devricks	Manuscript clerk	Do.
E. A. Wreidt	Director of vocational education	Do.

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II.—Principal State School Officers—Continued.

States and officers.	Official designation.	Address.
Indiana—Continued.		
H. G. McComb	Assistant director of vocational education	Indianapolis.
L. B. Job	State supervisor of vocational rehabilitation	Do.
Z. M. Smith	Supervisor of agricultural education	Do.
Bertha Latta	Assistant in vocational education	Do.
Oscar H. Williams	Supervisor of teacher-training	Do.
E. B. Wetherow	State school inspector	Do.
S. Leroy Scoles	Assistant State school inspector	Do.
Estes Duncan	Executive secretary of State teachers' retirement fund board.	Do.
owa:		
P. E. McClenahan	Superintendent of public instruction	Des Moines.
A. L. Heminger	Deputy superintendent	Do.
H. C. Hollingsworth	Chief clerk	Do.
M. R. Fayram	Inspector of normal training in high schools	Do.
George A. Brown	Inspector of rural and consolidated schools	Do.
F. A. Welch	Inspector of graded and high schools	Do.
W. H. Bender	Director of vocational education	Do.
Harvey L. Freeland	Supervisor of trades and industries	Do.
Louis Wermelskirchen	Assistant supervisor of agriculture	Do.
Alma Merwin	Director of home economics	Do.
Willis W. Grant	Supervisor of industrial rehabilitation	Do.
Kansas:		
Lorraine E. Wooster	State superintendent of public instruction	Topeka.
Geo. A. Allen	Assistant superintendent	Do.
B. E. Lewis	High-school supervisor	Do.
Claire W. Mitchell	....do	Do.
May Cain	Rural-school supervisor	Do.
Chas E. Baysinger	Chief clerk	Do.
Euna M. Arrasmith	Secretary State board of education	Do.
Kentucky:		
George W. Colvin	State superintendent of public instruction	Frankfort.
L. N. Taylor	Chief clerk	Do.
R. P. Green	State supervisor of high schools	Do.
J. V. Chapman	State supervisor of rural schools	Do.
F. C. Button	....do	Do.
P. H. Hopkins	....do	Do.
J. W. Carr	Director of physical training	Do.
Mrs. Abner Harris	State organizer parent-teacher association	Do.
G. Ivan Barnes	Director of vocational and superivsor of agricultural education.	Do.
Louisiana:		
T. H. Harris	State superintendent of education	Baton Rouge.
C. A. Ives	State high-school inspector	Do.
John M. Foote	State rural-school supervisor	Do.
A. M. Hopper	Assistant rural school inspector	Do.
John E. Cox	....do	Do.
C. F. Trudeau	Assistant State high-school inspector	Do.
Leo M. Favrot	State agent of rural schools for Negroes	Do.
A. C. Lewis	Assistant State agent of rural schools for Negroes	Do.
P. L. Gilbeau	State supervisor of agricultural schools	Do.
John R. Conniff	Chairman State teachers' examining committee and institute conductor.	Do.
Cleora C. Helbing	State supervisor of home economics	Do.
Clyde Mobley	Assistant supervisor of home economics	Do.
John E. Lombard	State director of physical education	Do.
J. G. Lee, jr	State director of agricultural teacher-training	Do.
W. H. Tipton	Chief clerk	Do.
Maine:		
Augustus O. Thomas	State superintendent of public schools	Augusta.
.....	Deputy superintendent	Do.
Josiah W. Taylor	Agent for secondary education	Do.
H. A. Allan	Agent for rural education	Do.
Florence M. Hale	....do	Do.
A. W. Gordon	General agent for schools in unorganized territory	Do.
Nellie W. Jordan	Director of physical education	Do.
E. K. Jenkins	Director of vocational education	Do.
R. E. Haines	Supervisor of trades and industries	Gorham.
Herbert S. Hill	Supervisor of agriculture	Orono.
Bernardine Cooney	Supervisor of household arts	Farmington.
Leah J. Abrahamson	Supervisor of Americanization	Portland.
.....	Supervisor of industrial rehabilitation	
.....	Chief clerk	Augusta.
Maryland:		
Albert S. Cook	State superintendent of schools	Baltimore.
George H. Reavis	Assistant State superintendent	Do.
S. M. North	Supervisor of high schools	Do.
E. C. Fontaine	....do	Do.
Wm. J. Holloway	Supervisor of rural schools	Do.
J. W. Huffington	Supervisor of colored schools	Do.
Roy Dimmitt	Supervisor of vocational education	Do.
William Burdick	Supervisor of physical education	Do.

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II.—Principal State School Officers—Continued.

States and officers.	Official designation.	Address.
Maryland—Continued.		
T. L. Gibson	Supervisor of music	Baltimore.
I. Jewell Simpson	Bureau of Educational Measurements	Do.
Bessie C. Stern	Statistician	Do.
T. A. Murray, jr	Chief clerk and auditor	Do.
Merle S. Bateman	Credential clerk	Do.
Massachusetts:		
Payson Smith	Commissioner of education	Boston.
Frank W. Wright	Director division of elementary and secondary education and normal schools.	Do.
Clarence D. Kingsley	Supervisor of secondary education	Do.
Burr F. Jones	Supervisor of elementary education	Do.
Robert I. Bramhall	Agent for research and statistics	Do.
Harry E. Gardner	Agent for registration of teachers	Do.
Royal B. Farnum	Director of art education	Do.
Robert O. Small	Director division of vocational education	Do.
Rufus W. Stimson	Agent for agricultural schools and departments	Do.
Arthur S. Allen	Agent for industrial schools for men and boys	Do.
Edith B. Hunt	Agent for industrial schools for women and girls and household arts schools and departments.	Do.
Caroline E. Nourse	Assistant agent for household arts schools and departments.	Do.
Wm. D. Parkinson	Agent for vocational teacher-training	Do.
Franklin E. Heald	Agent for teacher-training for agricultural schools	Amherst.
N. Norcross Stratton	Agent for teacher-training for industrial schools	Boston.
Anna A. Kloss	Agent for teacher-training for household arts schools	Do.
Edna M. Sturtevant	Assistant agent for teacher-training for household arts schools.	Framingham.
Carl E. Herrick	Agent for administration, vocational schools	Boston.
Herbert A. Dallas	Supervisor of industrial rehabilitation	Do.
Mary E. P. Lowney	Agent for industrial rehabilitation	Do.
James A. Moyer	Director division of university extension	Do.
Dennis A. Dooley	Agent for class organization, university extension	Do.
Charles W. Hobbs	Editor and supervisor of instruction, university extension.	Do.
John J. Mahoney	Supervisor of Americanization, university extension	Do.
Charles M. Herlihy	Agent for Americanization	Do.
Mary L. Guyton	Assistant agent for Americanization	Do.
Mrs. Nathaniel Thayer	Director division of immigration and Americanization.	Do.
Charles B. Hayes	Director division of the blind	Do.
Charles F. Belden	Director division of public libraries	Do.
Clayton L. Lent	Secretary teachers' retirement board	Do.
George H. Varney	Business agent	Do.
Thomas J. Greehan	Chief clerk	Do.
Michigan:		
Thomas E. Johnson	Superintendent of public instruction	Lansing.
W. L. Coffey	Deputy superintendent	Do.
G. N. Otwell	Assistant superintendent, head rural school division	Do.
C. L. Goodrich	Assistant superintendent, head high school division	Do.
Floyd A. Rowe	Assistant superintendent, head physical training division.	Do.
Ida M. Huston	Assistant superintendent, head certification division	Do.
Nella Dietrich	Head of editorial division	Do.
Grace B. Wallace	Head of statistical division	Do.
.....	Head of parochial division	Do.
.....	Head of rehabilitation division	Do.
Bert J. Ford	Assistant superintendent, rural school division	Do.
Isabelle Becker	....do	Do.
M. H. Milks	Building inspector, rural schools	Do.
Walter H. French	Director vocational education	Do.
E. E. Gallup	Supervisor of agriculture	Do.
K. G. Smith	Supervisor industrial education	Do.
Ruth Freegard	Supervisor home economics	Do.
Minnesota:		
J. M. McConnell	Commissioner of education	St. Paul.
P. C. Tonning	Deputy commissioner	Do.
E. M. Phillips	Director of vocational education and inspector of high schools.	Do.
George A. Selke	Inspector of rural schools	Do.
G. M. Cesander	Assistant inspector of rural schools	Do.
Anna Swenson	....do	Do.
R. B. MacLean	Inspector of elementary schools	Do.
H. E. Flynn	Inspector of teacher-training schools	Do.
J. E. Lunn	Assistant inspector of high and graded schools	Do.
Paul Calrow	Supervisor of agricultural education	Do.
G. A. McGarvey	Supervisor of trade and industrial education	Do.
Wylie B. McNeal	Supervisor of home-ecomomics education	Do.
S. A. Challman	Inspector of buildings and director of special classes for defectives.	Minneapolis.
E. T. Critchett	Director teachers' employment bureau and secretary of teachers' retirement fund.	St. Paul.

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II.—Principal State School Officers—Continued.

States and officers.	Official designation.	Address.
Minnesota—Continued.		
Clara F. Baldwin	Director of libraries	St. Paul.
Harriet A. Wood	Supervisor of school libraries and field organizer	Do.
Lillian E. Cook	Librarian	Do.
Gladys M. Brown	Reference librarian	Do.
Oscar M. Sullivan	Director of reeducation of injured persons	Do.
M. A. Morse	Assistant director of reeducation	Minneapolis.
K. O. Snortum	....do	St. Paul.
John O'Donnell	Placement officer	Do.
Christopher Lindahl	Accountant	Do.
Mississippi:		
W. F. Bond	State superintendent of public education	Jackson.
J. W. Broom	Assistant superintendent of public education	Do.
J. T. Calhoun	State supervisor rural schools	Do.
H. M. Ivy	High school inspector	Do.
Bura Hilbun	State supervisor of Negro schools	Do.
F. J. Hubbard	Director of secondary agricultural education	Do.
Patti M. Batson	Chief clerk	Do.
Missouri:		
Sam A. Baker	State superintendent of public schools and director of vocational and rehabilitation work.	Jefferson City.
George W. Reavis	Assistant director	Do.
Raymond Shoop	Chief clerk	Do.
A. S. Boucher	Teacher-training inspector	Do.
George Cole	High school inspector	Do.
Henry W. Abeken	....do	Do.
E. M. Denny	Rural school inspector	Do.
Agnes Rank	....do	Do.
G. A. Theilman	....do	Do.
Joe Livingston	Statistician	Do.
Wm. T. Spanton	Supervisor of vocational agriculture	Do.
Arnold A. Sather	Assistant supervisor of vocational agriculture	Do.
James P. Lennie	Supervisor of trades and industries	Do.
Clare E. White	Supervisor of home economics	Do.
Ernest L. Schneider	Supervisor of industrial rehabilitation	Do.
C. M. Le Bow	Rehabilitation field officer	Kansas City.
Ervine Meyer	....do	St. Louis.
Lillian H. Davis	....do	Do.
C. G. Williams	Inspector of Negro schools	Jefferson City.
Montana:		
May Trumper	State superintendent of public instruction	Helena.
Mina Petrashek	Deputy superintendent	Do.
Carl A. Jessen	High-school supervisor	Do.
Adelaide M. Ayer	Rural-school supervisor	Do.
Amalie Knobel	....do	Do.
G. B. Edwards	Director of vocational education	Do.
Anne Larson	Certification clerk	Do.
Nebraska:		
John M. Matzen	State superintendent of public instruction	Lincoln.
John Speedie	Deputy superintendent of public instruction	Do.
Cora A. Thompson	Assistant superintendent of public instruction	Do.
Lulu S. Wolford	....do	Do.
Archer L. Burnham	Normal-training inspector	Do.
Frank R. Beers	Assistant normal-training inspector	Do.
I. N. Clark	Rural-school inspector	Do.
Cecile Snapp	Secretary	Do.
Nevada:		
W. J. Hunting	State superintendent of public instruction	Carson City.
Charles Priest	Deputy superintendent	Do.
B. H. Morrison	State director of vocational education	Do.
New Hampshire:		
E. W. Butterfield	Commissioner of education	Concord.
Harriet L. Huntress	Deputy commissioner	Do.
James N. Pringle	....do	Do.
Walter M. May	....do	Do.
William Y. Morrison	High school inspector	Do.
Elizabeth M. Murphy	Supervisor of health	Do.
W. B. Cookingham	Supervisor of agriculture	Do.
Walter A. Pierce	Supervisor of trades and industries	Claremont.
John Bishop	Inspector of child welfare	Concord.
R. J. Mitchell	Inspector of child labor	Newmarket.
Curtis R. Bresnaham	....do	Nashua.
Richard H. Horan	Accountant	Concord.
New Jersey:		
John Enright	State commissioner of education	Trenton.
.....	Deputy commissioner and in charge of hearings in controversies and disputes.	Do.
L. L. Jackson	Assistant commissioner, secondary education	Do.
Roy S. Shaffer	Assistant commissioner, elementary education	Do.
Wesley A. O'Leary	Assistant commissioner, industrial education, including agriculture.	Do.
E. A. Reuther	Assistant for the supervision of continuation schools	Do.

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II.—Principal State School Officers—Continued.

States and officers.	Official designation.	Address.
New Jersey—Continued.		
R. A. Campbell	Assistant in industrial education	Trenton.
J. Gould Spofford	Assistant for training teachers of trades and industries.	Do.
H. O. Sampson	Assistant in agricultural education	Do.
Iris Prouty O'Leary	Special assistant for women's vocational work	Do.
Clara H. Krauter	Assistant for training teachers of home economics	Do.
John J. McCarthy	Assistant in industrial education	Do.
.....	Instructor and director physical training and hygiene.	Do.
Lester A. Palmer	Assistant director physical training and hygiene	Do.
Marianna G. Packer	Instructor in physical training and hygiene	Do.
Herbert N. Morse	Business manager	Do.
Henry W. Huston	Auditor of school accounts	Do.
Charles McDermott	Inspector of buildings	Do.
John S. Mount	Inspector of accounts	Do.
Alfred Christie	Statistician	Do.
New Mexico:		
John V. Conway	State superintendent of public instruction	Santa Fe.
Earl Douglass	Assistant State superintendent	Do.
Mabel A. Hughes	Secretary to State superintendent	Do.
Myron Lugiblhl	Certification clerk	Do.
J. W. Giddings	Chief clerk	Do.
Ruth C. Miller	Industrial director	Do.
A. B. Anderson	Supervisor of trades and industries	Do.
R. W. Foard	Supervisor of agriculture	Do.
New York:		
Frank P. Graves	State commissioner of education	Albany.
Frank B. Gilbert	Deputy commissioner and counsel	Do.
Augustus S. Downing	Assist. commissioner and director professional educa.	Do.
Charles F. Wheelock	Assistant commissioner for secondary education	Do.
George M. Wiley	Assistant commissioner for elementary education	Do.
James I. Wyer, jr	Director of State library	Do.
John M. Clarke	Director of science and State museum	Do.
Hiram C. Case	Chief of administration division	Do.
James D. Sullivan	Chief of attendance division	Do.
William R. Watson	Chief of educational extension division	Do.
Avery W. Skinner	Examination and inspections division	Do.
James Sullivan	Director of archives and history division	Do.
Frank H. Wood	Chief of school buildings and grounds	Do.
Irwin Esmond	Chief of law division	Do.
Edna M. Sanderson	Vice director of library school	Do.
Sherman Williams	Chief of school libraries division	Do.
Alfred W. Abrams	Chief of visual instruction division	Do.
Lewis A. Wilson	Director of agricultural and industrial education	Do.
Frederick A. Wilkes	Specialist in commercial education	Do.
North Carolina:		
E. C. Brooks	State superintendent of public instruction	Raleigh.
A. S. Brower	Director division of certification	Do.
Marybelle Delamar	Secretary division of certification	Do.
Frances Lacy	Assistant secretary, division of certification	Do.
C. D. Douglas	Supervisor of State loan fund	Do.
J. H. Highsmith	State supervisor of public high schools	Do.
L. C. Brogden	State agent for rural schools	Do.
Elizabeth Kelly	Supervisor of schools for adults	Do.
N. C. Newbold	Director of division of Negro education	Do.
A. T. Allen	Director of division of teacher-training	Do.
Susan Fulghum	Supervisor of division of teacher-training	Goldsboro.
Hattie Parrott	....do	Kinston.
Mrs. T. E. Johnston	....do	Salisbury.
J. J. Blair	Director of division of schoolhouse planning	Raleigh.
W. H. Pittman	Director of division of publications	Do.
W. C. Crosby	Director of division of school extension	Do.
J. B. Williamson	Supervisor of mechanics	Do.
Mrs. C. S. Thomas	Film librarian	Do.
T. E. Browne	Director of vocational education	Do.
Edith M. Thomas	Supervisor of vocational home economics	Do.
Roy H. Thomas	Supervisor of agriculture	Do.
R. A. Olney	Assistant supervisor of agriculture	Do.
George W. Coggin	Supervisor of trades and industries	Do.
H. H. Willis	Assistant supervisor of trades and industries	Do.
H. L. Stanton	Supervisor of vocational rehabilitation	Do.
North Dakota:		
Minnie Nielson	State superintendent of public instruction	Bismarck.
E. J. Taylor	Deputy superintendent	Do.
Bertha R. Palmer	Assistant superintendent	Do.
C. L. Robertson	High-school inspector	Do.
Edward Erickson	Rural-school inspector	Do.
A. C. Berg	....do	Do.
J. W. Riley	....do	Do.
Mrs. Margaret W. Page	Chief clerk	Do.

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II.—Principal State School Officers—Continued.

States and officers.	Official designation.	Address.
Ohio:		
Vernon M. Riegel	Director of education	Columbus.
W. B. Bliss	Assistant director of education	Do.
H. G. Swygert	Statistician	Do.
Geo. M. Morris	Rural school supervisor	Do.
T. Howard Winters	Inspector of teacher-training	Do.
Mrs. C. C. Waltermire	Assistant inspector teacher-training	Do.
E. B. Hawes	Chief, division of examination and licensing	Do.
H. D. Byrne	High school supervisor	Kent.
F. C. Landsittel	....do	Columbus.
E. L. Heusch	Supervisor of trades and industries	Do.
E. W. Myers	Assistant supervisor of trades and industries	Pleasant Hill.
Ray Fife	Supervisor of agriculture	Columbus.
Enid W. Lunn	Supervisor of home economics	Do.
W. F. Shaw	Supervisor of industrial rehabilitation	Do.
Dale Wolf	Assistant supervisor of industrial rehabilitation	Do.
S. Cary Abercrombie	Female case worker	Do.
Oklahoma:		
Robert H. Wilson	State superintendent of public instruction	Oklahoma.
E. N. Collette	Assistant superintendent	Do.
Ella H. Hunt	Agricultural assistant	Edmund.
C. M. Howell	High school inspector	Do.
E. E. Tourtellotte	....do	Stillwater.
Luther Russell	....do	Wewoka.
E. A. Duke	Rural school supervisor	Oklahoma.
Pearl Hall	Chief clerk	Do.
Oregon:		
J. A. Churchill	State superintendent of public instruction	Salem.
W. M. Smith	Assistant state superintendent	Do.
Marie Schwab	Secretary	Do.
J. E. Calavan	Industrial field worker	Oregon City.
E. E. Elliott	State director of vocational education	Salem.
Pennsylvania:		
Thos. E. Finegan	Superintendent of public instruction	Harrisburg.
J. George Becht	Deputy superintendent (higher education)	Do.
Wm. D. Lewis	Deputy superintendent (secondary education)	Do.
Fred Engelhardt	Director of administration bureau	Do.
C. W. Hunt	Assistant director of administration bureau	Do.
Jonas E. Wagner	....do	Do.
Edwin E. Bach	District director of Americanization bureau	Do.
Lucy W. Glass	....do	Do.
Eugene W. Fellows	....do	Do.
Mrs. Sarah R. Christy	....do	Do.
Alfred W. Castle	District director of teacher-training, Americanization bureau.	Do.
Stella W. Jones	District director of women's work, Americanization bureau.	Do.
W. M. Denison	Director of attendance bureau	Do.
William S. Taft	Assistant director of attendance bureau	Do.
D. E. Crosley	Supervisor of attendance	Do.
Mildred Fischer	....do	Do.
J. Y. Shambach	....do	Do.
George A. Stearns	....do	Do.
Charles H. Keene	Director of health education	Do.
Katharine A. Prittchett	Supervisor of nutrition	Do.
Ethel Beard	Supervisor of school nursing	Do.
Helena McCray	Supervisor of health education	Do.
Harry R. Allen	Supervisor of physical education	Do.
Wm. G. Moorehead	....do	Do.
Mary H. Heffernan	....do	Do.
C. D. Koch	Director of credential bureau	Do.
A. D. Jackson	Assistant director of credential bureau	Do.
Lee L. Driver	Director of rural education	Do.
Thomas A. Bock	Assistant director of rural education	Do.
Robert C. Shaw	....do	Do.
Dallas W. Armstrong	....do	Do.
Hubert C. Eicher	Director of school buildings bureau	Do.
Carlisle D. Hasness	Assistant, school buildings bureau	Do.
Maurice E. Kressly	....do	Do.
M. Edwin Green	....do	Do.
H. H. Baish	Secretary of school employees' retirement	Do.
Francis N. Maxfield	Director of special education	Do.
Muriel Brown	Supervisor of special education	Do.
Edna M. Kugler	....do	Do.
Albert L. Rowland	Director of teacher bureau	Do.
Francis B. Haas	Assistant director of teacher bureau	Do.
Henry Klonower	Assistant, teacher placement service	Do.
William S. Taylor	Assistant, vocational teacher-training	Do.
L. H. Dennis	Director of vocational bureau	Do.
J. D. Blackwell	Assistant director of agricultural education	Do.
J. K. Bowman	Supervisor of agricultural education	Do.
H. C. Fetterolf	....do	Do.

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II.—Principal State School Officers—Continued.

States and officers.	Official designation.	Address.
Pennsylvania—Continued.		
H. E. Gayman	Supervisor of agricultural education	Harrisburg.
Frank R. Morey	Supervisor of school gardens	Do.
Owen D. Evans	Assistant director of continuation schools	Do.
Helen J. Dodge	Assistant director of home economics	Do.
Mrs. Anna G. Green	Supervisor of home economics	Do.
Lu M. Hartman	do	Do.
F. Theodore Struck	Assistant director of industrial education	Do.
Wm. Penn Loomis	Supervisor of industrial education	Do.
Gerald D. Whitney	do	Do.
Harold L. Holbrook	do	Do.
C. Valentine Kirby	Director of art education	Do.
F. G. Nichols	Director of commercial education	Do.
Orton Lowe	Director of English	Do.
G. C. L. Reimer	Director of foreign languages	Do.
Erna Grassmuck	Director of geography	Do.
J. A. Foberg	Director of mathematics	Do.
Hollis Dann	Director of music	Do.
Selma M. Konold	Supervisor of music	Do.
Clara F. Sanford	do	Do.
Adeline B. Zachert	Director of school libraries	Do.
J. Lynn Barnard	Director of social studies	Do.
Helen M. Peppard	Director of speech improvement	Do.
James M. Glass	Director of junior high schools	Do.
James G. Pents	Inspector of junior high schools	Do.
Philippine Islands:		
Luther B. Bewley	Director of education	Manila.
Camilio Osias	Assistant director of education	Do.
John W. Osborn	Assistant to the director of education	Do.
John J. Heffington	Acting superintendent, Department of Mindanao and Sulu.	Zamboanga.
Jose A. De Kastro	Chief clerk	Manila.
G. Glenn Lyman	Superintendent of property and accounts	Do.
North H. Foreman	Superintendent of agricultural instruction	Do.
Roy K. Gilmore	Chief, academic division	Do.
Horace E. Culter	Chief, industrial division	Do.
	Chief, buildings division	Do.
Jose Reyes	Chief of records	Do.
Mariano del Rosario	Chief accountant	Do.
Jacinto Atanacio	Disbursing officer	Do.
Alberto Delusung	Property officer	Do.
Porto Rico:		
Juan B. Huyke	Commissioner of education	San Juan.
Carey Hickle	Assistant commissioner	Do.
Francisco Vizcarrondo	Secretary of department	Do.
Joseph C. Morin	General superintendent	Do.
George V. Keelan	do	Do.
Jose Gonzales Ginorio	General superintendent of Spanish	Do.
George A. Harriman	Chief, division of property and accounts	Do.
A. Gonzales Font	Chief, division of municipal school affairs	Do.
Rhode Island:		
Walter E. Ranger	Commissioner of education	Providence.
Emerson L. Adams	Assistant commissioner	Do.
Charles Carroll	Secretary and deputy for vocational education	Do.
John L. Alger	Inspector of high schools	Do.
Anne W. Congdon	Library visitor	Do.
Leslie E. Abbott	Supervisor of agricultural education	Kingston.
Ida S. Harrington	Supervisor of home economics education	Do.
Benj. T. Leland	Supervisor of industrial education	Providence.
Agnes M. Bacon	Supervisor of Americanization	Do.
South Carolina:		
J. E. Swearingen	State superintendent of education	Columbia.
E. D. Easterling	Chief clerk	Do.
W. A. Shealy	Mill school supervisor	Do.
P. W. Bethea	Rural school supervisor	Do.
B. L. Parkinson	State high-school inspector	Do.
Miss Wil Lou Gray	Supervisor of adult schools	Do.
J. B. Felton	Supervisor of Negro schools	Do.
Verd Peterson	Supervisor of agricultural instruction	Do.
E. W. Garris	do	Do.
H. B. Adams	Supervisor of trade and industrial education	Do.
R. E. Lee	State school architect	Clemson College.
Lillian Hoffman	Supervisor of vocational home economics	Columbia.
Mattie E. Thomas	Community school organizer	Do.
D. L. Lewis	Rural school supervisor	Do.
J. H. Shealy	Registrar, teacher placement bureau	Do.
A. O. V. Hoffman	Bookkeeper	Do.
South Dakota:		
Fred L. Shaw	State superintendent of public instruction	Pierre.
Charles T. King	Deputy superintendent	Do.
M. M. Guhin	Director of Americanization and rural education	Do.

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II.—Principal State School Officers—Continued.

States and officers.	Official designation.	Address.
South Dakota—Continued.		
Fred E. Smith	High school supervisor and director of vocational education.	Pierre.
Gertrude Lynass	Assistant in Americanization	Do.
Bonnie Martin	Assistant in rural education	Do.
Gilbert I. Ruden	do	Do.
Edna Courtney	Supervisor of home economics	Do.
Gertrude Lison	Supervisor of rehabilitation of persons injured in industry.	Do.
M. A. Sharp	Supervisor of vocational agriculture	Do.
Helen Breisford	Supervisor of certification	Do.
Gertrude Fischbach	Credentials clerk	Do.
Ellen Dunlevy	Examination clerk	Do.
Ira Howell	Truancy officer	Do.
Tennessee:		
J. B. Brown	State superintendent of public instruction	Nashville.
B. O. Duggan	State high-school inspector	Do.
J. W. Brister	Associate high-school inspector	Do.
P. L. Harned	State rural school agent	Do.
Ollie H. Bernard	State rural school supervisor	Do.
D. M. Clements	Agricultural supervisor	Do.
James Arentson	Industrial supervisor	Do.
Lena Pierce	Supervisor of home economics	Do.
Emma Watts	Director of library extension	Do.
Joe Jennings	Chief clerk	Do.
Texas:		
Annie Webb Blanton	State superintendent of public instruction	Austin.
S. M. N. Marrs	First assistant superintendent	Do.
Mary Jo Popplewell	Second assistant superintendent	Do.
Mrs. Ella F. Little	Third assistant superintendent	Do.
Katherine Gray	Chief supervisor of high schools	Do.
C. L. Davis	Director of agricultural education	Do.
J. H. Hinds	Assistant director of agricultural education	Do.
Jessie Harris	Director of home economics	Do.
Lillian Peek	Assistant director of home economics	Do.
N. S. Hunsdon	Director of industrial education	Do.
Lizzie M. Barbour	Assistant director of industrial education	Do.
L. D. Borden	Chief supervisor of rural schools	Do.
L. W. Rogers	Chief of division of Negro schools	Do.
Minnie L. Barrett	Director of textbook administration	Do.
Mrs. J. B. Gay	Statistician	Do.
Amy V. Allen	Auditor	Do.
Selby Attwell	Certificate clerk	Do.
Emma Mitchell	Chairman and college examiner of State board of examiners.	Do.
Utah:		
C. N. Jensen	State superintendent of public instruction	Salt Lake City.
E. J. Norton	Deputy superintendent	Do.
Mosiah Hall	State supervisor of industrial rehabilitation	Do.
E. G. Gowans	State director of health education	Do.
Irvin S. Noall	State supervisor in trades and industries	Do.
I. B. Ball	State supervisor in agriculture	Do.
Jean Cox	State supervisor in home economics	Do.
A. C. Matheson	State director of Americanization	Do.
Matilda Peterson	State primary supervisor	Do.
Vermont:		
Clarence H. Dempsey	Commissioner of education	Montpelier.
.....	State supervisor of junior high schools	
J. D. Whittier	Supervisor of elementary education	Burlington.
E. P. Hamilton	Executive clerk, State board	Montpelier.
Katherine Aagesen	Director of teacher training	Do.
Rose Lucia	Supervisor of rural schools	Do.
Virginia:		
Harris Hart	State superintendent of public instruction	Richmond.
J. N. Hillman	Secretary State board of education	Do.
E. E. Worrell	State supervisor of rural schools	Do.
W. D. Gresham	State supervisor of Negro schools	Do.
Thomas D. Eason	State supervisor of agricultural education	Do.
Henry G. Ellis	State supervisor of high schools	Do.
Rachel E. Gregg	State supervisor of teacher training	Do.
Raymond V. Long	State supervisor of trades and industries	Do.
Mrs. Ora H. Avery	State supervisor of home economics education	Do.
Guy C. Throner	State supervisor of physical education	Do.
Washington:		
Mrs. Josephine C. Preston	State superintendent of public instruction	Olympia.
Blanche A. Nagel	Assistant superintendent	Do.
W. U. Neeley	Deputy superintendent	Do.
Edwin Twitmyer	High-school inspector	Do.
West Virginia:		
George M. Ford	State superintendent of schools	Charleston.
J. H. Hickman	Assistant superintendent	Do.
J. F. Marsh	Secretary and field agent, State board of education	Do.

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II.—Principal State School Officers—Continued.

States and officers.	Official designation.	Address.
West Virginia—Continued.		
L. L. Friend	Supervisor of high schools	Charleston.
E. E. Knight	Assistant supervisor of high schools	Do.
J. D. Muldoon	Supervisor of rural schools	Do.
J. S. Bonar	Assistant supervisor of rural schools	Do.
Melville Stewart	do	Do.
Wm. W. Sanders	Supervisor of Negro schools	Do.
Frank M. Kearns	Director of department of medical inspection and sanitation.	Do.
Phil M. Conley	Supervisor, department of citizenship and thrift	Do.
Robert Clark	Supervisor, department of teacher-training	Do.
Lillian Carver	Assistant supervisor, department of teacher-training	Do.
George E. Hubbs	Supervisor of department of trades and industries	Do.
John C. Shaw	Agent for rehabilitation	Wheeling.
O. A. Watson	do	Buckhannon.
Wm. C. Meadows	do	Charleston.
H. K. Barbe	do	Welch.
Jno. W. Cook	Statistician and bookkeeper	Charleston.
H. A. Stover	Supply clerk	Do.
Wisconsin:		
John Callahan	State superintendent of public schools	Madison.
C. J. Anderson	Assistant State superintendent	Do.
C. L. Harper	Second assistant State superintendent	Do.
O. S. Rice	Supervisor of school libraries	Do.
W. J. Osburn	Supervisor of educational measurements	Do.
Joseph T. Giles	Supervisor of high schools	Do.
Pauline B. Camp	Supervisor of day schools for the deaf and blind	Do.
H. W. Schmidt	Supervisor of manual arts	Do.
Geo. H. Drewry	State school supervisor	Do.
S. Miles Thomas	do	Do.
W. T. Anderson	do	Do.
Annie Reynolds	Supervisor of elementary schools and supervising teachers.	Do.
Maybell G. Bush	Supervisor of elementary schools	Do.
Isobel Davidson	do	Do.
Elizabeth L. Woods	Clinical psychologist and supervisor of special classes	Do.
Melicent Waterhouse	Assistant psychologist	Do.
A. A. Thomson	Supervisor of rural schools	Do.
George S. Dick	do	Do.
Irene Newman	Assistant librarian	Do.
Aletta Olson	Diploma and certificate clerk	Do.
John F. Shaw	Publicity editor	Do.
Wyoming:		
Mrs. Katharine A. Morton	State superintendent of public instruction	Cheyenne.
Serafina Facinelli	Deputy superintendent of public instruction	Do.
Lewis C. Tidball, jr	Commissioner of education and chief of certification division.	Do.
James R. Coxen	State director of vocational education	Do.
W. M. Horne	State supervisor of vocational agriculture	Do.
Elise A. Seyfarth	State director of special classes	Do.
Virginia Warkley	Assistant State director of special classes	Do.

III.—County and Other Local Superintendents of Schools.

County.	County superintendent.	County.	County superintendent.
ALABAMA.		ALABAMA—contd.	
Autauga	Mrs. R. L. Faucett, Prattville.	Covington	J. A. Keller, Andalusia.
Baldwin	S. M. Tharp, Bay Minette.	Crenshaw	T. A. Capps, Luverne.
Barbour	P. A. McDaniel, jr., Clayton.	Cullman	A. B. Murphree, Cullman.
Bibb	H. H. Jones, Centerville.	Dale	E. C. Palmer, Newton.
Blount	A. L. Head, Oneonta.	Dallas	D. M. Callaway, Selma.
Bullock	F. B. Haynes, Union Springs.	Dekalb	C. J. Allen, Fort Payne.
Butler	P. B. Pepper, Greenville.	Elmore	G. H. Howard, Wetumpka.
Calhoun	S. B. Gibson, Anniston.	Escambia	R. H. Southerland, Brewton.
Chambers	G. M. Barnett, Lafayette.	Etowah	E. P. Murphy, Gadsden.
Cherokee	John W. Browder, Center.	Fayette	Z. D. Vick, Fayette.
Chilton	H. L. Foshee, Clanton.	Franklin	John R. Guin, Russellville.
Choctaw	Zac Rogers, Butler.	Geneva	J. G. Austin, Hartford.
Clarke	J. F. Gillis, Grove Hill.	Greene	W. P. Archibald, Knoxville.
Clay	W. T. Harwell, Ashland.	Hale	Edward L. Coleback, Greensboro.
Cleburne	G. B. Boman, Heflin.	Henry	O. E. Tompkins, Abbeville.
Coffee	G. C. Bowden, Elba.	Houston	C. W. Johnson, Dothan.
Colbert	J. T. McKee, Tuscumbia.	Jackson	Jesse Wheeler, Scottsboro.
Conecuh	W. R. Bennett, Evergreen.	Jefferson	N. R. Baker, Birmingham.
Coosa	O. K. Weldon, Rockford.		

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III.—County and Other Local Superintendents of Schools—Continued.

County.	County superintendent.	County.	County superintendent.
ALABAMA—contd.		ALABAMA—contd.	
Lamar	G. S. Smith, Vernon.	Perry	W. R. Carothers, Marion.
Lauderdale	D. O. Warren, Florence.	Pickens	W. H. Storey, Carrollton.
Lawrence	E. M. Hodson, Moulton.	Pike	Mrs. J. M. Sanders, Troy.
Lee	W. Y. Fleming, Opelika.	Randolph	I. G. Hendon, Wedowee.
Limestone	M. K. Clements, Athens.	Russell	H. B. Hamner, Seale.
Lowndes	J. A. Coleman, Hayneville.	St. Clair	Carl O. Baxter, Ashville.
Macon	W. B. Riley, Tuskegee.	Shelby	S. P. Williamson, Sterrett.
Madison	S. R. Butler, Huntsville.	Sumter	R. B. Callaway, Livingston.
Marengo	Geo. M. Watson, Linden.	Talladega	D. A. McNeill, Talladega.
Marion	T. D. Brooks, Hamilton.	Tallapoosa	J. D. Lane, Dadeville.
Marshall	E. O. Creel, Guntersville.	Tuscaloosa	D. L. Smith, Tuscaloosa.
Mobile	S. S. Murphy, Mobile.	Walker	J. Alex Moore, Jasper.
Monroe	Geo. A. Harris, Monroeville.	Washington	C. C. Smith, Chatom.
Montgomery	A. L. Harman, Montgomery.	Wilcox	O. C. Weaver, Camden.
Morgan	E. L. Hays, Albany.	Winston	A. B. Curtis, Double Springs.

District.	District superintendent of schools for natives.	District.	District superintendent of schools for natives.
ALASKA.		ALASKA—cont'd.	
Northwestern district.	James H. Maguire, Noorvik.	Southeastern district.	C. W. Hawkesworth, Juneau.
Western district	Earle M. Forrest, Akiak.	Seward Peninsula district.	Jean Dupertuis, Nome.
Upper Yukon district.	Benj. B. Mozee, Tanana.		
Southwestern district.	Arthur H. Miller, Anchorage.		

County.	County superintendent.	County.	County superintendent.
ARIZONA.		ARKANSAS—contd.	
Apache	Mrs. Nancy Gibbons, St. Johns.	Dallas	Mrs. J. B. Nunn, Fordyce.
Cochise	Helen L. Brown, Cochise.	Desha	L. M. Gary, Dumas.
Coconino	Virginia Lockett, Flagstaff.	Drew	E. C. Robertson, Monticello.
Gila	Lucy Nash, Globe.	Faulkner	A. A. Parsons, jr., Conway.
Graham	S. C. Heywood, Safford.	Franklin	W. I. Ages, Ozark.
Greenlee	Mrs. Jessie L. Johnson, Clifton.	Fulton	Fred Moore, Salem.
Maricopa	A. L. Jones, Phoenix.	Garland	Garnett Braughton, Hot Springs.
Mohave	Mrs. R. A. Lassell, Kingman.	Grant	D. O. Rushing, Sheridan.
Navajo	Mrs. Hattie Penrod, Holbrook.	Greene	H. R. Partlow, Paragould.
Pima	Mrs. Kate Reynolds, Tucson.	Hempstead	H. D. Clark, Hope.
Pinal	Lola Le Baron, Florence.	Hot Spring	R. F. Tackett, Friendship.
Santa Cruz	Mrs. Josephine Saxon, Nogales.	Howard	Ed Compton, Nashville.
Yavapai	Mrs. Ward H. Wheeler, Prescott.	Independence	W. T. Jernigan, Batesville.
Yuma	Nora E. Morrow, Yuma.	Izard	T. H. Linn, Melbourne.
ARKANSAS.		Jackson	G. E. Land, Newport.
Arkansas	J. M. Henderson, jr., De Witt.	Jefferson	W. P. Keith, Pine Bluff.
Ashley	F. T. McCuistion, Hamburg.	Johnson	R. C. Temple, Clarksville.
Baxter	W. H. Osburn, Mountain Home.	Lafayette	J. F. Bright, Lewisville.
Benton	F. A. Wood, Bentonville.	Lawrence	W. E. McLeod, Walnut Ridge.
Boone	R. B. Gaston, Harrison.	Lee	Alma Futrall, Marianna.
Bradley	W. M. Brown, Warren.	Lincoln	W. R. Stephens, jr., Star City.
Calhoun	Lewis Doherty, Thornton.	Little River	L. F. Wheelis, Ashdown.
Carroll	Clifford Fry, Berryville.	Logan	H. G. Thomasson, Magazine.
Chicot	D. T. Henderson, Lake Village.	Lonoke	W. C. Davis, Lonoke.
Clark	A. S. Ross, Arkadelphia.	Madison	Afton Wheeler, Huntsville.
Clay	W. W. Henry, Corning.	Marion	L. E. Briggs, Yellville.
Cleburne	B. F. Jordan, Heber Springs.	Miller	Otto Forehand, Texarkana.
Cleveland	R. C. Carmical, Rison.	Mississippi	W. M. Crow, Blytheville.
Columbia	Mary Harper, Magnolia.	Monroe	W. E. Phipps, Clarendon.
Conway	T. L. Haynes, Morrilton.	Montgomery	Ernest Berry, Mount Ida.
Craighead	E. B. Barrett, Jonesboro.	Nevada	J. W. Teeter, Prescott.
Crawford	J. P. Bingham, Van Buren.	Newton	J. O. Ferrter, Jasper.
Crittenden	T. P. Johnson, Earle.	Ouachita	J. J. Tibbits, Camden.
Cross	H. L. Lessenberry, Wynne.	Perry	W. B. Loudermilk, Adona.
		Phillips	L. P. Anderson, Marvell.
		Pike	G. C. Floyd, Murfreesboro
		Poinsett	V. A. Murphy, Harrisbur

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III.—County and Other Local Superintendents of Schools—Continued.

County.	County superintendent.
ARKANSAS—contd.	
Polk	W. H. Morden, Mena.
Pope	T. D. Bullock, Russellville.
Prairie	Lillie Bryant, De Valls Bluff.
Pulaski	Mrs. F. H. Dodge, Little Rock.
Randolph	R. A. Mock, Pocahontas.
St. Francis	J. M. Wilson, Forrest City.
Saline	W. A. Jackson, Benton.
Scott	G. C. Ellis, Waldron.
Searcy	J. M. McCall, Marshall.
Sebastian	L. M. Redwine, Greenwood.
Sevier	L. E. Quinn, De Queen.
Sharp	W. T. McJunkins, Ash Flat.
Stone	J. T. Campbell, Mountain View.
Union	Mrs. Helen S. Henry, El Dorado.
Van Buren	T. J. Cowan, Clinton.
Washington	O. W. Dass, Fayetteville.
White	J. W. Henry, Searcy.
Woodruff	J. T. Caughley, Augusta.
Yell	T. A. Wright, Dardanelle.
CALIFORNIA.	
Alameda	Geo. W. Frick, Oakland.
Alpine	Mrs. Eugenia M. Bruns, Sheridan, Nev.
Amador	Mrs. Sabra Greenhalgh, Jackson.
Butte	Irvin Passmore, Oroville.
Calaveras	Teresa Rivara, San Andreas.
Colusa	Perle Sanderson, Colusa.
Contra Costa	Wm. H. Hanlon, Martinez.
Del Norte	Edwin A. Moore Cresent City.
Eldorado	E. J. Fitzgerald, Placerville.
Fresno	Clarence W. Edwards, Fresno.
Glenn	S. M. Chaney, Willows.
Humboldt	Robert A. Bugbee, Eureka.
Imperial	H. C. Coe, El Centro.
Inyo	Mrs. M. A. Clarke, Bishop.
Kern	L. E. Chenoweth, Bakersfield.
Kings	Miss M. L. Richmond, Hanford.
Lake	Minerva Ferguson, Lakeport.
Lassen	Mrs. Julia Norwood, Susanville.
Los Angeles	Mark Keppel,, Los Angeles.
Madera	Craig Cunningham, Madera.
Marin	Jas. B. Davidson, San Rafael.
Mariposa	John L. Dexter, Mariposa.
Mendocino	Roy Good, Ukiah.
Merced	Mrs. Belle S. Gribi, Merced.
Modoc	Mrs. Nettie B. Harris, Alturas.
Mono	Mildred Gregory, Bodie.
Monterey	H. Louise Schultzberg, Salinas.
Napa	Lena A. Jackson, Napa.
Nevada	Elizabeth M. Richards, Nevada City.
Orange	R. P. Mitchell, Santa Ana.
Placer	Irene Burns, Auburn.
Plumas	Mrs. Kate I. Donnelley, Quincy.
Riverside	Ira C. Landis, Riverside.
Sacramento	Carolyne M. Webb, Sacramento.
San Benito	W. J. Cagney, Hollister.
San Bernardino	Mrs. Grace C. Stanley, San Bernardino.
San Diego	Ada York, San Diego.
San Francisco	Alfred Roncovieri, San Francisco.
San Joaquin	Mrs. Effie Anderson, Stockton.
San Luis Obispo	Robert L. Bird, San Luis Obispo.
San Mateo	Roy W. Cloud, Redwood City.
Santa Barbara	A. S. Pope, Santa Barbara.
Santa Clara	Agnes E. Howe, San Jose.
Santa Cruz	Cecil M. Davis, Santa Cruz.
Shasta	Mrs. Charlotte Cunningham, Redding.
Sierra	Belle Alexander, Downieville.
Siskiyou	W. L. Kleaver, Yreka.
Solano	Dan H. White, Fairfield.
Sonoma	Ben Ballard, Santa Rosa.
Stanislaus	A. G. Elmore, Modesto.
Sutter	Lizzie Vagedes, Yuba City.
Tehama	Mamie B. Lang, Red Bluff.
Trinity	Lucy Young, Weaverville.
Tulare	J. E. Buckman, Visalia.
Tuolumne	G. P. Morgan, Sonora.
Ventura	Mrs. Blanche T. Reynolds, Ventura.
Yolo	Harriett S. Lee, Woodland.
Yuba	Jennie Malaley, Marysville.
COLORADO.	
Adams	Mary V. McFarland, Brighton.
Alamosa	Harriett Dalzell, Alamosa.
Arapahoe	Mrs. Sada R. Wilson, Littleton.
Archuleta	Mrs. Sadie Betzer, Pagosa Springs.
Baca	Mrs. Margaret E. Jackson, Springfield.
Bent	Minnie Rimmer, Las Animas.
Boulder	Mrs. Anna J. Bittner, Boulder.
Chaffee	Marion B. Wallace, Buena Vista.
Cheyenne	Esther B. Weir, Cheyenne Wells.
Clear Creek	Mrs. Elizabeth Gleason, Idaho Springs.
Conejos	Mrs. Mable Mickelson, Conejos.
Costilla	Mrs. Elizabeth F. Dugan, San Luis.
Crowley	R. E. Rhine, Ordway.
Custer	Mrs. Lou C. Beaman, Westcliffe.
Delta	Mrs. Grace Cummings, Delta.
Denver	Mrs. Helen M. Wixon, Denver.
Dolores	Eva M. Bell, Rico.
Douglas	Mrs. Lenora Prescott, Castle Rock.
Eagle	Mrs. Ollie G. Meyer, Redcliff.
Elbert	Minerva McCarty, Kiowa.
El Paso	Mrs. Inez Johnson Lewis, Colorado Springs.
Fremont	Mrs. Carrie T. Anthony, Canon City.
Garfield	Mrs. Gretta Pottinger, Glenwood Springs.
Gilpin	Mrs. Edith Williams, Central City.
Grand	Mrs. Carrie D. Schnoor, Fraser.
Gunnison	Helen Blackstock, Gunnison.
Hinsdale	Mabel B. Rawson, Lake City.
Huerfano	Dorothy Arnold, Walsenburg.
Jackson	Mrs. Minnie Bock, Walden.
Jefferson	Myrtle Songer, Golden.
Kiowa	Florence B. Barnard, Eads.
Kit Carson	Jessie Magee Gray, Burlington.
Lake	Mrs. Mary C. Clark, Leadville.
La Plata	Nell McCartey, Durango.
Larimer	Emma T. Wilkins, Fort Collins.
Las Animas	Elmore Floyd, Trinidad.
Lincoln	Mrs. Della Winder, Hugo.
Logan	Flora A. Allison, Sterling.
Mesa	Mrs. Elizabeth Hinton, Grand Junction.
Mineral	Mrs. Mary N. Oates, Creede.
Moffat	Mrs. Laura K. Canon, Craig.
Montezuma	Mrs. Nora S. Hutchings, Cortez.
Montrose	Sarah L. Taylor, Montrose.
Morgan	Laura N. Buhchsted, Fort Morgan.
Otero	R. D. McClintock, La Junta.

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III.—County and Other Local Superintendents of Schools—Continued.

County.	County superintendent.	County.	County superintendent.
COLORADO—con.		COLORADO—con.	
Ouray	Statie Erickson, Ouray.	San Juan	Mrs. Mary B. Hodges, Silverton.
Park	Mrs. Zoe R. Chapman, Fairplay.	San Miguel	Kathleen O'Kelly, Telluride.
Phillips	Chas. R. Peters, Holyoke.	Sedgwick	Mrs. Elma Schroeder, Julesburg.
Pitkin	Mrs. Anna Short, Aspen.	Summit	Mrs. Alice Richardson, Breckenridge.
Prowers	Pauline Gilbert, Lamar.	Teller	Mrs. Blanche C. Odell, Cripple Creek.
Pueblo	Mrs. Lillie O. Baker, Pueblo.	Washington	Rosa E. Bachman, Akron.
Rio Blanco	Lillian Baker, Meeker.	Weld	C. W. Martin, Greeley.
Rio Grande	Carrie Deitrich, Monte Vista.	Yuma	T. H. Hooper, Wray.
Routt	Anna Funk, Hayden.		
Saguache	Mrs. Margaret Martin, Saguache.		

Towns in union.	Supervising agents.	Towns in union.	Supervising agents.
CONNECTICUT.		CONNECTICUT—continued.	
Ashford, Coventry, Mansfield.	A. W. Greer, Willimantic.	Cornwall, Kent, Sharon.	H. M. Jeffords, Kent.
Avon, Burlington, Farmington.	L. S. Mills, Plainville.	Cromwell, Haddam.	A. L. Young, Middletown.
Barkhamsted, Colebrook, Goshen, Hartland, New Hartford.	F. J. Penley, Winsted.	Durham, Middlefield, North Branford, Woodbridge.	Elsie Klein, 76 Harriet St., Bridgeport.
Beacon Falls, Bethany, Oxford, Prospect, Wolcott.	I. B. Dunfield, Waterbury.	Eastford, Pomfret, Union, Woodstock.	T. F. Rupp, Putnam.
Bethlehem, Woodbury.	G. C. Swift, Watertown.	East Granby, Suffield.	H. B. Chapman, Suffield.
Bloomfield, Newington.	W. H. Mandrey, 25 Brookline Ave., Hartford.	East Hampton, Portland.	J. F. Connolly, Middletown.
Bolton	W. S. Dakin, State Capitol, Hartford.	East Lyme, Old Lyme, Lyme, Salem.	F. T. Wilson, Niantic.
Borrah, Ledyard, North Stonington, Preston.	S. Hussey Reed, Norwich.	Easton, Monroe, Trumbull, Weston.	F. W. Knight, 273 Wayne St., Bridgeport.
Bridgewater, Roxbury, Sherman, Warren.	O. E. Lowell, New Milford.	Ellington, Somers, Tolland.	L. C. Staples, Ellington.
Brookfield, New Fairfield, Redding, Wilton.	H. D. Sylvester, Danbury.	Hampton, Scotland.	C. L. Brownell, State Capitol, Hartford.
Canaan, North Canaan, Salisbury.	W. M. Teague, Canaan.	Harwinton	R. N. Brown, Thomaston.
Canterbury, Lisbon, Sterling, Voluntown.	Sarah T. Palmer, North Stonington.	Killingworth, Westbrook.	Larla Roundy, Deep River.
Canton, Granby	W. M. Strong, Collinsville.	Madison	A. D. Simpson, State Capitol, Hartford.
Cheshire, North Haven.	D. C. Allen, North Haven.	Middlebury, Newtown, Southbury.	F. H. Johnston, Newtown.
Chester, Old Saybrook, Saybrook.	C. W. Maddocks, Deep River.	Rocky Hill	F. E. Harrington, State Capitol, Hartford.
Colchester, Hebron, Marlborough.	H. S. Libby, Colchester.	Washington	E. W. Ireland, State Capitol, Hartford.
Columbia, Franklin, Lebanon, Sprague.	.....	Willington	L. T. Garrison, Willimantic.

County.	County superintendent.	County.	County superintendent.
FLORIDA.		FLORIDA—contd.	
Alachua	E. R. Simmons, Gainesville.	Clay	P. L. Tippins, Green Cove Springs.
Baker	W. R. Simmons, Macclenny.	Columbia	J. W. Burns, Lake City.
Bay	C. C. Mathis, Panama City.	Dade	Chas. M. Fisher, Miami.
Bradford	H. B. Wiggins, Starke.	De Soto	P. G. Shaver, Arcadia.
Brevard	S. J. Overstreet, Titusville.	Dixie	W. R. Fletcher, Fletcher.
Broward	J. S. Rickards, Fort Lauderdale.	Duval	F. A. Hathaway, Jacksonville.
Calhoun	P. F. Fisher, Blountstown.	Escambia	A. S. Edwards, Pensacola.
Charlotte	W. E. Bell, Punta Gorda.	Flagler	D. B. Brown, Bunnell.
Citrus	Jesse Montague, Inverness.	Franklin	A. A. Core, Apalachicola.

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III.—County and Other Local Superintendents of Schools—Continued.

County.	County superintendent.
FLORIDA—contd.	
Gadsden	C. H. Gray, Quincy.
Glades	M. S. Hayes, Moore Haven.
Hamilton	W. W. Bradshaw, Jasper.
Hardee	W. R. Gramling, Wauchula.
Hernando	L. D. Hathaway, Brooksville.
Highlands	I. C. M. Ellenberger, Sebring.
Hillsborough	J. E. Knight, Tampa.
Holmes	T. J. McDade, Bonifay.
Jackson	C. W. Lockey, Marianna.
Jefferson	W. M. Scruggs, Monticello.
La Fayette	J. W. Morgan, Mayo.
Lake	D. H. Moore, Tavares.
Lee	J. D. McFerron, Fort Myers.
Leon	F. S. Hartsfield, Tallahassee.
Levy	T. W. Price, Bronson.
Liberty	J. E. Roberts, Bristol.
Madison	T. C. Simms, Madison.
Manatee	B. D. Gullett, Bradentown.
Marion	H. G. Shealy, Ocala.
Monroe	V. S. Lowe, Key West.
Nassau	O. T. Weaver, Fernandina.
Okaloosa	G. W. Barrow, Crestview.
Okeechobee	W. R. Terrell, Okeechobee.
Orange	A. B. Johnson, Orlando.
Osceola	C. E. Yowell, Kissimmee.
Palm Beach	Agnes Ballard, West Palm Beach.
Pasco	E. B. O'Berry, Dade City.
Pinellas	R. S. Blanton, Clearwater.
Polk	C. A. Parker, Bartow.
Putnam	C. H. Price, Palatka.
St. Johns	D. D. Corbett, St. Augustine.
St. Lucie	E. E. Smith, Fort Pierce.
Santa Rosa	R. B. Hobbs, Milton.
Sarasota	T. W Yarbrough, Sarasota.
Seminole	T. W. Lawton, Sanford.
Sumter	W. T. Eddins, Bushnell.
Suwannee	J. A. Holmes, Live Oak.
Taylor	W. T. Cash, Perry.
Union	O. L. Mizelle, Lake Butler.
Volusia	C. R. M. Sheppard, DeLand.
Wakulla	Jacob C. Pigott, jr., Arran.
Walton	J. J. Kennedy, De Funiak Springs.
Washington	J. T. Hightower, Vernon.
GEORGIA.	
Appling	H. J. Parker, Baxley.
Atkinson	J. G. White, Pearson.
Bacon	G. A. Taylor, Alma.
Baker	C. W. Twitty, Elmodel.
Baldwin	P. N. Bivins, Milledgeville.
Banks	W. B. Smith, Homer.
Barrow	J. B. Brookshire, Winder.
Bartow	J. W. Jackson, Cartersville.
Ben Hill	J. H. Bullard, Fitzgerald.
Berrien	W. G. Avera, Nashville.
Bibb	C. H. Bruce, Macon.
Bleckley	L. A. Whipple, Cochran.
Brantley	Everett Knox, Hickox.
Brooks	J. J. Sizemore, Quitman.
Bryan	H. G. Van Brackle, Pembroke.
Bulloch	J. W. Davis, Statesboro.
Burke	O. M. Gresham, Waynesboro.
Butts	Van Fletcher, Jackson.
Calhoun	H. T. Singleton, Edison.
Camden	W. R. Smith, St. Marys.
Campbell	M. D. Collins, Fairburn.
Candler	M. H. Williams, Metter.
Carroll	V. D. Whatley, Carrollton.
Catoosa	W. E. Bryan, Ringgold.
Charlton	L. E. Mallard, Folkston.
Chatham	C. B. Gibson, Savannah.
Chattahoochee	C. N. Howard, Cusseta.
Chattooga	S. E. Jones, Summerville.
Cherokee	T. A. Doss, Canton.
Clarke	T. H. Dozier, Athens.
Clay	C. T. Norton, Bluffton.
Clayton	W. L. Gilbert, Jonesboro.
Clinch	J. O. Rodgers, Homerville.
Cobb	Hugh Moore, Marietta.
Coffee	J. Gordon Floyd, Douglas.
Colquitt	L. O. Rogers, Moultrie.
Columbia	J. S. Hardin, Harlem.
Cook	J. C. Thomas, Adel.
Coweta	J. M. Starr, Newnan.
Crawford	J. F. Dickey, Musella.
Crisp	J. W. Bivins, Cordele.
Dade	J. B. Dugan, Trenton.
Dawson	A. W. Vandiviere, Dawsonville.
Decatur	Roland Bower, Bainbridge.
Dekalb	R. E. Carroll, Decatur.
Dodge	M. W. Harrell, Eastman.
Dooly	Paul I. Ellison, Vienna.
Dougherty	S. R. DeJarnette, Albany.
Douglas	G. T. McLarty, Douglasville.
Early	F. B. Melton, Blakely.
Echols	R. Y. Touchton, Statenville.
Effingham	F. D. Seckinger, Guyton.
Elbert	T. J. Cleveland, Elberton.
Emanuel	R. E. Rountree, Swainsboro.
Evans	Theodore Brewton, Claxton.
Fannin	F. L. Cochran, Blue Ridge.
Fayette	L. M. Lester, Fayetteville.
Floyd	W. C. Rash, Rome.
Forsyth	A. B. Tollison, Cumming.
Franklin	J. W. Landrum, Carnesville.
Fulton	J. W. Simmons, Atlanta.
Gilmer	F. E. Pettit, Ellijay.
Glascock	E. B. Rogers, Gibson.
Glynn	Chas. E. Dryden, Brunswick.
Gordon	W. L. Swain, Calhoun.
Grady	J. S. Weathers, Cairo.
Greene	W. A. Purks, White Plains.
Gwinnett	H. D. Meriwether, Lawrenceville.
Habersham	C. W. Grant, Clarksville.
Hall	J. D. Underwood, Gainesville.
Hancock	C. W. Moran, Sparta.
Haralson	John W. White, Buchanan.
Harris	Tom Wisdom, Chipley.
Hart	W. B. Morris, Hartwell.
Heard	W. E. Denney, Franklin.
Henry	T. J. Horton, McDonough.
Houston	M. C. Mosley, Byron.
Irwin	Philip Newberne, Ocilla.
Jackson	T. T. Benton, Jefferson.
Jasper	W. D. Cornwell, Monticello.
Jeff Davis	G. N. Yarbrough, Hazelhurst
Jefferson	Paul Pressly, Louisville.
Jenkins	W. V. Lanier, Millen.
Johnson	L. L. Lillard, Wrightsville.
Jones	E. W. Sammons, Gray.
Lamar	Mattie Tyus, Barnesville.
Lanier	J. C. Williams, Milltown.
Laurens	Z. Whitehurst, Dublin.
Lee	S. J. Powell, Leesburg.
Liberty	E. B. Way, Hinesville.
Lincoln	T. L. Perryman, Lincolnton.
Long	Wm. C. Patton, Ludowici.
Lowndes	M. L. Strong, Valdosta.
Lumpkin	C. Shultz, Dahlonega.
McDuffie	M. W. Dunn, Thomson.
McIntosh	W. A. Branson, Darien.
Macon	J. P. Nelson, Oglethorpe.
Madison	R. C. David, Danielsville.
Marion	T. B. Rainey, Buena Vista.
Meriwether	W. S. Howell, Greenville.
Miller	N. L. Stapleton, Colquitt.
Milton	J. R. Holloway, Alpharetta.
Mitchell	J. R. Sloan, Camilla.
Monroe	T. H. Phinazee, Forsyth.
Montgomery	T. B. Conner, Mount Vernon.
Morgan	W. C. Thompson, Madison.
Murray	T. W. Colvard, Crandall.
Muscogee	J. L. Bond, Columbus.

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III.—County and Other Local Superintendents of Schools—Continued.

County.	County superintendent.
GEORGIA—contd.	
Newton	G. C. Adams, Covington.
Oconee	R. M. Nicholson, Watkinsville.
Oglethorpe	E. W. Martin, Arnoldsville.
Paulding	C. A. Roberts, Dallas.
Pickens	G. F. Compton, Jasper.
Pierce	J. S. Pittman, Blackshear.
Pike	F. L. Adams, Zebulon.
Polk	Wm. James, Cedartown.
Pulaski	A. G. McKinney, Hawkinsville.
Putnam	W. C. Wright, Eatonton.
Quitman	H. M. Kaigler, Georgetown.
Rabun	John C. Howard, Quartz.
Randolph	Walter McMichael, Cuthbert.
Richmond	Lawton B. Evans, Augusta.
Rockdale	G. W. Crumbley, Conyers.
Schley	J. F. Stewart, Ellaville.
Screven	H. J. Arnett, Sylvania.
Seminole	J. T. Goree, Donaldsonville.
Spalding	J. P. Manley, Griffin.
Stephens	Gordon Walters, Toccoa.
Stewart	W. T. Halliday, Lumpkin.
Sumter	E. W. Du Pree, Americus.
Talbot	A. B. McNiece, Talbotton.
Taliaferro	W. R. Moore, Sharon.
Tattnall	J. O. Bacon, Reidsville.
Taylor	W. T. Rustin, Butler.
Telfair	B. J. Reid, McRae.
Terrell	J. C. Dukes, Dawson.
Thomas	C. H. Rice, Thomasville.
Tift	A. J. Ammons, Tifton.
Toombs	T. B. Youmans, Vidalia.
Towns	R. T. Coleman, Young Harris
Treutlen	R. E. Ward, Soperton.
Troup	T. G. Polhill, La Grange.
Turner	D. A. Stewart, Ashburn.
Twiggs	B. S. Fitzpatrick, Fitzpatrick.
Union	J. W. Twiggs, Choestoe.
Upson	J. A. Thurston, Thomaston.
Walker	J. A. Sartain, La Fayette.
Walton	J. W. Clegg, Monroe.
Ware	C. W. Pittman, Waycross.
Warren	M. J. Bruce, Norwood.
Washington	T. J. Davis, Sandersville.
Wayne	B. D. Purcell. Jesup.
Webster	Cleveland Rees, Preston.
Wheeler	J. P. Tomlinson, Alamo.
White	C. H. Edwards, Cleveland.
Whitfield	J. D. Field, Dalton.
Wilcox	W. A. Stone, Pitts.
Wilkes	S. B. Savage, Washington.
Wilkinson	Victor Davidson, Irwinton.
Worth	W. R. Sumner, Sylvester.
IDAHO.	
Ada	Lura V. Paine, Boise.
Adams	Mrs. Oriana M. Hubbard, Council.
Bannock	Nora A. Boyum, Pocatello.
Bear Lake	Letha Dunford, Paris.
Benewah	Leila Clifford, St. Maries.
Bingham	Mrs. Grace Faulconer, Blackfoot.
Blaine	Beulah Coats, Hailey.
Boise	Mrs. Hailey Skinner, Idaho City.
Bonner	Mrs. Jessie H. Tuck, Sandpoint.
Bonneville	Jesse H. Nielsen, Idaho Falls.
Boundary	Mrs. Caroline W. Flood, Bonners Ferry.
Butte	Mrs. Louisa Pratt, Arco.
Camas	Pearle H. Lamson, Fairfield.
Canyon	Margaret Knowlton, Caldwell.
Caribou	A. J. Gronewald, Soda Springs.
Cassia	Mae Lowe, Burley.
Clark	Mrs. Anna Hales, Dubois.
Clearwater	Evelyn S. Mervin, Orofino.
IDAHO—contd.	
Custer	Mrs. Florence G. Rowles, Challis.
Elmore	Mrs. Pearl S. Barber, Mountain Home.
Franklin	John Johnson, Preston.
Fremont	A. C. Lambert, St. Anthony.
Gem	Mrs. Ella Reed, Emmett.
Gooding	Miss Douglas Hilts, Gooding.
Idaho	Leonard Case, Grangeville.
Jefferson	W. S. Burton, Rigby.
Jerome	Mrs. June L. Kearney, Jerome.
Kootenai	R. C. Egbers, Coeur d'Alene.
Latah	Lillian Skattaboe, Moscow.
Lemhi	Mrs. Ethel G. Watkins, Salmon.
Lewis	Mrs. Norma Wilson Bettis, Nez Perce.
Lincoln	Mrs. Leah M. Burnside, Shoshone.
Madison	Wm. B. Oldham, Rexburg.
Minidoka	Mrs. Ida E. Sullivan, Rupert.
Nez Perce	Ethel Gilson, Lewiston.
Oneida	James C. Tovey, Malad.
Owyhee	Mrs. Belle V. Cook, Silver City.
Payette	Anna Pearson, Payette.
Power	Goldie Drake, American Falls.
Shoshone	Mrs. Mary J. Barnes, Wallace.
Teton	L. M. Strong, Driggs.
Twin Falls	Miss Brittomart Wolfe, Twin Falls.
Valley	Mrs. Tirza J. Wayland, Cascade.
Washington	M. Gladys Houston, Weiser.
ILLINOIS.	
Adams	John H. Steiner, Quincy.
Alexander	Asa D. Twente, Cairo.
Bond	J. W. Anthony, Greenville.
Boone	Elizabeth B. Harvey, Belvidere.
Brown	Lavina O'Neil, Mount Sterling.
Bureau	G. O. Smith, Princeton.
Calhoun	S. J. Sibley, Hardin.
Carroll	John Hay, Mount Carroll.
Cass	Walter E. Buck, Virginia.
Champaign	Charles H. Watts, Urbana.
Christian	O. P. Simpson, Taylorville.
Clark	Harold Bright, Marshall.
Clay	George W. Brewer, Louisville.
Clinton	Wm. Johnston, Carlyle.
Coles	O. L. Minter, Charleston.
Cook	E. J. Tobin, Chicago (C. H.).
Crawford	O. B. Mount, Robinson.
Cumberland	L. C. Markwell, Toledo.
Dekalb	Warren Hubbard, Sycamore.
Dewitt	Roy H. Johnson, Clinton.
Douglas	E. E. Gere, Tuscola.
Dupage	Lewis Morgan, Wheaton.
Edgar	O. Rice Jones, Paris.
Edwards	Grant Balding, Albion.
Effingham	J. W. Davis, Effingham.
Fayette	F. E. Crawford, Vandalia.
Ford	H. M. Rudolph, Paxton.
Franklin	H. Clay Ing, Benton.
Fulton	P. H. Hellyer, Lewistown.
Gallatin	J. F. Ashley, Ridgway.
Greene	Rollins L. Scott, Carrollton.
Grundy	E. F. Booth, Morris.
Hamilton	S. O. Dale, McLeansboro.
Hancock	S. D. Faris, Carthage.
Hardin	Hattie M. Rittenhouse, Elizabethtown.
Henderson	Allen L. Beall, Oquawka.
Henry	W. F. Huston, Cambridge.
Iroquois	F. A. Gilbreath, Watseka.
Jackson	Otto F. Aken, Murphysboro.

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III.—County and Other Local Superintendents of Schools—Continued.

County.	County superintendent.
ILLINOIS—contd.	
Jasper	J. H. Pursifull, Newton.
Jefferson	William Miner, Mount Vernon.
Jersey	Joseph W. Becker, Jerseyville.
Jo Daviess	B. L. Birkbeck, Galena.
Johnson	E. Wilburn Sutton, Vienna.
Kane	E. M. Harris, Geneva.
Kankakee	Lewis Ogilvie, Kankakee.
Kendall	George Elliot, Yorkville.
Knox	W. F. Boyes, Galesburg.
Lake	T. A. Simpson, Waukegan.
La Salle	W. R. Foster, Ottawa.
Lawrence	Ed. Ashbaugh, Lawrenceville.
Lee	L. W. Miller, Dixon.
Livingston	W. W. McCulloch, Pontiac.
Logan	E. H. Lukenbill, Lincoln.
McDonough	B. E. Decker, Macomb.
McHenry	A. M. Shelton, Crystal Lake.
McLean	B. C. Moore, Bloomington.
Macon	Everett L. Dickey, Decatur.
Macoupin	George W. Solomon, Carlinville.
Madison	H. T. McCrea, Edwardsville.
Marion	Hattie M. Blair, Salem.
Marshall	Willard E. King, Lacon.
Mason	John C. Stoddard, Havana.
Massac	Luther L. Evers, Metropolis.
Menard	William Small, Petersburg.
Mercer	G. E. Platt, Aledo.
Monroe	William C. Heyl, Waterloo.
Montgomery	Everett A. Lewey, Hillsboro.
Morgan	H. H. Vasconcellos, Jacksonville.
Moultrie	Mrs. Lois Coombes, Sullivan.
Ogle	J. E. Cross, Oregon.
Peoria	J. A. Hayes, Peoria.
Perry	R. B. Templeton, Pinckneyville.
Piatt	Chas. McIntosh, Monticello.
Pike	Thos. C. Moore, Pittsfield.
Pope	Mrs. Stella A. Wierwille, Golconda.
Pulaski	May S. Hawkins, Mound City.
Putnam	Anna M. Holliday, Granville.
Randolph	L. W. Von Behren, Chester.
Richland	Earl H. Hostettler, Olney.
Rock Island	Justin Washburn, Rock Island.
Saline	B. D. Gates, Harrisburg.
Sangamon	E. C. Pruitt, Springfield.
Schuyler	Calvin L. Cain, Rushville.
Scott	Olive Wells, Winchester.
Shelby	Charles B. Guin, Shelbyville.
Stark	G. C. Baker, Toulon.
St. Clair	W. A. Hough, Belleville.
Stephenson	George W. Scott, Freeport.
Tazewell	C. I. Martin, Pekin.
Union	Charles O. Otrich, Jonesboro.
Vermilion	Otis P. Haworth, Danville.
Wabash	Elmer Greathouse, Mount Carmel.
Warren	Frank Winbigler, Monmouth.
Washington	T. E. Allen, Nashville.
Wayne	J. B. Galbraith, Fairfield.
White	D. L. Boyd, Carmi.
Whiteside	H. B. Price, Morrison.
Will	August Maue, Joliet.
Williamson	J. W. McKinney, Marion.
Winnebago	Mrs. Abbie Jewett Craig, Rockford.
Woodford	Roy L. Moore, Eureka.
INDIANA.	
Adams	E. S. Christen, Decatur.
Allen	D. O. McComb, Fort Wayne.
Bartholomew	Samuel Sharp, Columbus.
Benton	M. F. O'Rear, Fowler.
Blackford	W. E. Pursley, Hartford City.
Boone	John H. Hussey, Lebanon.
Brown	Grover G. Brown, Nashville.
Carroll	A. G. Fox, Delphi.

County.	County superintendent.
INDIANA—contd.	
Cass	Ira A. Kessler, Logansport.
Clark	Saml. L. Scott, Jeffersonville.
Clay	J. R. McCullough, Brazil.
Clinton	M. D. Boulden, Frankfort.
Crawford	H. H. Pleasant, English.
Daviess	J. E. Gilley, Washington.
Dearborn	Geo. C. Cole, Lawrenceburg.
Decatur	James R. Crawley, Greensburg.
Dekalb	Clarence Green, Auburn.
Delaware	Lee O. Baird, Muncie.
Dubois	Robert E. Eckert, Jasper.
Elkhart	C. F. Miller, Goshen.
Fayette	Claude Trusler, Connersville.
Floyd	Glenn V. Scott, New Albany.
Fountain	Guy A. Waldrip, Covington.
Franklin	Michael A. Bossert, Brookville.
Fulton	Thomas F. Berry, Rochester.
Gibson	Ben H. Watt, Princeton.
Grant	Albert R. Hall, Marion.
Greene	Walter T. Brown, Bloomfield.
Hamilton	Walter Harger, Noblesville.
Hancock	R. R. Roudebush, Greenfield.
Harrison	Jas. T. McClaren, Corydon.
Hendricks	Geo. H. Reitzel, Danville.
Henry	H. B. Roberts, Newcastle.
Howard	Albert F. Hutson, Kokomo.
Huntington	C. Funderburg, Huntington.
Jackson	Harry B. Henderson, Brownstown.
Jasper	Morgan L. Sterrett, Rensselaer.
Jay	Harry Nixon, Portland.
Jefferson	W. Guy Pender, Madison.
Jennings	S. M. Whitcomb, Vernon.
Johnson	W. J. Yount, Franklin.
Knox	W. W. Carter, Vincennes.
Kosciusko	Jesse Bruner, Warsaw.
Lagrange	Hilda Hughes, Lagrange.
Lake	F. F. Heighway, Crown Point.
Laporte	Clayton L. Rhoade, Laporte.
Lawrence	Wm. C. Roberts, Bedford.
Madison	J. C. House, Anderson.
Marion	Lee E. Swails, Indianapolis
Marshall	Louis E. Steinbach, Plymouth.
Martin	R. V. Eddington, Shoals.
Miami	E. L. Powell, Peru.
Monroe	W. H. Jones, Bloomington.
Montgomery	Merle F. Coons, Crawfordsville.
Morgan	Isaac M. Kenworthy, Martinsville.
Newton	W. O. Schanlaub, Kentland.
Noble	Guy R. Hall, Albion.
Ohio	John L. Wessler, Rising Sun.
Orange	Harry Kirk, Paoli.
Owen	Albert Free, Spencer.
Parke	John H. Jolliet, Rockville.
Perry	Preston Harding, Cannelton.
Pike	Howard Brenton, Gleaen.
Porter	Fred H. Cole, Valparaiso.
Posey	G. E. Behrens, Mount Vernon.
Pulaski	F. G. Neel, Winamac.
Putnam	Frank Wallace, Greencastle.
Randolph	O. H. Greist, Winchester.
Ripley	Hale C. Pickett, Versailles.
Rush	W. E. Wagoner, Rushville.
St. Joseph	John W. Rittinger, South Bend.
Scott	Clinton Gamble, Scottsburg.
Shelby	W. Everson, Shelbyville.
Spencer	U. S. Lindsey, Rockport.
Starke	J. Allen Barr, Knox.
Steuben	G. O. Simpson, Angola.
Sullivan	Richard Park, Sullivan.
Switzerland	Ernest Dangiade, Vevay.
Tippecanoe	C. V. Peterson, La Fayette.
Tipton	George H. Spencer, Tipton.
Union	Chas. C. Abernethy, Liberty.
Vanderburg	K. W. Hemmer, Evansville.
Vermilion	J. F. Lewman, Newport.

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III.—County and Other Local Superintendents of Schools—Continued.

County.	County superintendent.
INDIANA—contd.	
Vigo	Paul B. Williams, Terre Haute.
Wabash	Howard Williams, Wabash.
Warren	Harry Evans, Williamsport.
Warrick	Levi Barker, Boonville.
Washington	Leon B. Mather, Salem.
Wayne	C. O. Williams, Richmond.
Wells	Justin H. Merriman, Bluffton.
White	Kirby B. Payne, Monticello.
Whitley	R. E. Mosher, Columbia City.
IOWA.	
Adair	Minerva Whittum, Greenfield.
Adams	Anna Lynam, Corning.
Allamakee	W. L. Peck, Waukon.
Appanoose	Janet Wilson, Centerville.
Audubon	Augusta Hecker, Audubon.
Benton	Emma R. Crossley, Vinton.
Black Hawk	H. C. Moeller, Waterloo.
Boone	Gracia E. Tucker, Boone.
Bremer	Grace Beebe, Waverly.
Buchanan	A. E. Jewett, Independence.
Buena Vista	A. E. Harrison, Storm Lake.
Butler	Hazel Black, Allison.
Calhoun	Helen Wilson, Rockwell City.
Carroll	George Galloway, Carroll.
Cass	Myrtle R. Hardenbergh, Atlantic.
Cedar	Jane McCormick, Tipton.
Cerro Gordo	R. E. Newcomb, Mason City.
Cherokee	Mrs. Hazel Jackson, Cherokee.
Chickasaw	Alf Vaala, New Hampton.
Clarke	Ora Griswell, Osceola.
Clay	Etta M. Smith, Spencer.
Clayton	Margaret C. Myers, Elkader.
Clinton	C. E. Cozzens, Clinton.
Crawford	F. N. Olry, Denison.
Dallas	May A. Hills, Adel.
Davis	H. C. Brown, Bloomfield.
Decatur	Kate Hull, Leon.
Delaware	W. A. Ottilie, Manchester.
Des Moines	Vail Cordell, Burlington.
Dickinson	Verna M. Gray, Spirit Lake.
Dubuque	Joseph Flynn, Dubuque.
Emmet	Marie Sorum, Estherville.
Fayette	N. J. Breckner, West Union.
Floyd	Mary D. Korinke, Charles City.
Franklin	Harry J. Henderson, Hampton.
Fremont	Wilbur Simons, Sidney.
Greene	Mrs. Hazel Ott, Jefferson.
Grundy	D. R. Earl, Grundy Center.
Guthrie	C. A. Young, Guthrie Center.
Hamilton	E. F. Snow, Webster City.
Hancock	J. R. Baggs, Garner.
Hardin	Bessie Steinberg, Eldora.
Harrison	Alice Divelbess, Logan.
Henry	Eva Allen, Mount Pleasant.
Howard	Vernette Moore, Cresco.
Humboldt	Clarence Messer, Humboldt.
Ida	J. M. Rees, jr., Ida Grove.
Iowa	Ida O'Brien, Marengo.
Jackson	E. R. Stoddard, Maquoketa.
Jasper	Lucy E. Hall, Newton.
Jefferson	June Chidester, Fairfield.
Johnson	W. N. Leeper, Iowa City.
Jones	Nellie V. Morey, Anamosa.
Keokuk	Harry S. McVicker, Sigourney.
Kossuth	Wm. Shirley, Algona.
Lee	E. C. Lynn, Donnellson.
Linn	Lula B. Secrist, Marion.
Louisa	Myrtle Jamison, Wapello.
Lucas	I. S. Guernsey, Chariton.
Lyon	E. T. Gilman, Rock Rapids.
Madison	Lina Dudney, Winterset.
Mahaska	Erma Krout, Oskaloosa.
Marion	Avis Graive, Knoxville.
Marshall	C. E. Shutt, Marshalltown.
Mills	Geo. E. Masters, Glenwood.
Mitchell	Blanche M. McLaughlin, Osage.
Monona	Esther Troustrom, Onawa.
Monroe	Esther Roberts, Albia.
Montgomery	Hattie E. Hough, Red Oak.
Muscatine	E. D. Bradley, Muscatine.
O'Brien	Bessie McNutt, Primghar.
Osceola	Mary E. De Boos, Sibley.
Page	Agnes Samuelson, Clarinda.
Palo Alto	Gertrude M. Thornwell, Emmetsburg.
Plymouth	Agnes Eyres, Le Mars.
Pocahontas	Mrs. J. H. McMichael, Pocahontas.
Polk	Mrs. A. H. Hoffman, Des Moines.
Pottawattamie	Charlotte Dryden, Council Bluffs.
Poweshiek	Estelle Coon, Brooklyn.
Ringgold	Louise Askren, Mount Ayr.
Sac	P. A. Lauterbach, Sac City.
Scott	Hermine Schneckloth, Davenport.
Shelby	Rose M. Parker, Harlan.
Sioux	Charles H. Tye, Orange City.
Story	Maude Wakefield, Nevada.
Tama	Mary A Richards, Toledo.
Taylor	Allie Nelson, Bedford.
Union	Mrs. Nancy Bell, Creston.
Van Buren	H. B. Carroll, Keosauqua.
Wapello	Celia Bell, Ottumwa.
Warren	W. M. McGee, Indianola.
Washington	Clara Wallace, Washington.
Wayne	Ava Amenell, Corydon.
Webster	Anna Johnson, Fort Dodge.
Winnebago	Jessie Parker, Forest City.
Winneshiek	Gertrude Crane, Decorah.
Woodbury	J. F. Garnes, Sioux City.
Worth	Nora M. King, Northwood.
Wright	Blanche Bock, Clarion.
KANSAS.	
Allen	Florence H. Round, Iola.
Anderson	Blanche McClun, Garnett.
Atchison	Ada Smith, Atchison.
Barber	Glenola Wilkins, Medicine Lodge.
Barton	M. V. Rinker, Great Bend.
Bourbon	May Hare, Fort Scott.
Brown	L. C. Morgan, Hiawatha.
Butler	C. W. Thomas, El Dorado.
Chase	Clint. A. Baldwin, Cottonwood Falls.
Chautauqua	Flora Holroyd, Sedan.
Cherokee	G. A. Sanders, Columbus.
Cheyenne	Mrs. Edith Voeller, St. Francis.
Clark	Maggie M. Myers, Ashland.
Clay	Mrs. Georgia F. Borland, Clay Center.
Cloud	Jane Collins, Concordia.
Coffey	Mrs. Allie B. Smith, Burlington.
Comanche	Ethel M. Smith, Coldwater.
Cowley	Arka Shoemaker, Winfield.
Crawford	J. W. Miley, Girard.
Decatur	Romaine Wyatt, Oberlin.
Dickinson	Mary E. Woolverton, Abilene.
Doniphan	C. R. Hewins, Troy.
Douglas	O. J. Lane, Lawrence.
Edwards	Mary Mullikin, Kinsley.
Elk	H. A. Gilmore, Howard.
Ellis	Louis Christiansen, Hays
Ellsworth	H. Coover, Ellsworth
Finney	Emma F. Wilson, City.
Ford	Mrs. Edna L. Cobl City.

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III.—County and Other Local Superintendents of Schools—Continued.

County.	County superintendent.
KANSAS—contd.	
Franklin	Ellen Larson, Ottawa.
Geary	Mrs. Nora R. Clark, Junction City.
Gove	John Lindquist, Gove.
Graham	Le Roy Mowrey, Hill City.
Grant	Mrs. Gladys Hennigh, New Ulysses.
Gray	Vera Furse, Cimarron.
Greeley	G. W. Lowrey, Tribune.
Greenwood	Ralph A. Cannon, Eureka.
Hamilton	Mrs. Elizabeth Tapscott, Syracuse.
Harper	Mrs. Lulu Carithers, Anthony.
Harvey	Mary J. Morrison, Newton.
Haskell	George B. Levitt, Sublette.
Hodgeman	Winifred T. Goller, Jetmore.
Jackson	F. R. Palmer, Holton.
Jefferson	May Nunceheiser, Oskaloosa.
Jewell	Lawrence Dial, Mankato.
Johnson	Lucile Ewing, Olathe.
Kearny	Mrs. India Simmons, Lakin.
Kingman	Mrs. Maud S. Branden, Kingman.
Kiowa	Mrs. Ava Hayes, Greensburg.
Labette	Mrs. Eva E. Cruzan, Oswego.
Lane	Alma Jasper, Dighton.
Leavenworth	Eph Voorhees, Leavenworth.
Lincoln	Ella Miller, Lincoln.
Linn	M. Ellen Dingus, Mound City.
Logan	Mrs. Eunice G. Garrity, Russell Springs.
Lyon	Timon Covert, Emporia.
McPherson	Hattie Heckethorne, McPherson.
Marion	James A. Ray, Marion.
Marshall	Mrs. Etta B. Beavers, Marysville.
Meade	Ola Granger, Meade.
Miami	Emma Mills, Paola.
Mitchell	A. R. Loop, Beloit.
Montgomery	Nora C. Howard, Independence.
Morris	Mrs. Flora E. Davis, Council Grove.
Morton	Mrs. H. O. Bean, Richfield.
Nemaha	R. G. Mueller, Seneca.
Neosho	Susie Berry, Erie.
Ness	Edna Robison, Ness City.
Norton	Mrs. Myrtle Newbold, Norton.
Osage	Annie Daniel, Lyndon.
Osborne	Bertha Yoxall, Osborne
Ottawa	Lillias Mortimer, Minneapolis.
Pawnee	Elizabeth Davis, Larned.
Phillips	H. E. Bradley, Phillipsburg.
Pottawatomie	Mrs. Kate E. Hooven, Westmoreland.
Pratt	Mrs. Bertha H. Arnold, Pratt.
Rawlins	Bert Kesselring, Atwood.
Reno	S. P. Rowland, Hutchinson.
Republic	Mrs. Frances J. Fickel, Belleville.
Rice	Mrs. Flora Guethlin, Lyons.
Riley	Reppie Carey, Manhattan.
Rooks	Emma Bigge, Stockton.
Rush	Mrs. Alta Mellick, La Crosse.
Russell	Pearl Comer, Russell.
Saline	Birdie K. Crittenden, Salina.
Scott	Leo T. Gibbens, Scott City.
Sedgwick	R. M. Crum, Wichita.
Seward	Emma Thompson, Liberal.
Shawnee	Josiah Jordan, Topeka.
Sheridan	Stella M. Lewis, Hoxie.
Sherman	Otis E. Doane, Goodland.
Smith	Wm. McMullen, Smith Center.
Stafford	Anna M. Beck, St. John.
Stanton	Mrs. Effie Yingling, Johnson.
Stevens	Mrs. Bedia Combs, Hugoton.
Sumner	Mrs. Kate D. Sniggs, Wellington.
Thomas	Lulu Holmes, Colby.
Trego	Elizabeth McCall, Wakeeney.
Wabaunsee	M. O. Wright, Alma.
Wallace	Mrs. Emma Sears, Sharon Springs.
Washington	Luella Hill, Washington.
Wichita	Ethel Whitchurch, Leoti.
Wilson	Mrs. Fannie Lyon, Fredonia.
Woodson	Cecile Davidson, Yates Center.
Wyandotte	Olive I. Thompson, Kansas City.
KENTUCKY.	
Adair	Noah Loy, Columbia.
Allen	N. S. Shaw, Scottsville.
Anderson	T. J. Leathers, Lawrenceburg.
Ballard	W. A. Anderson, Wickliffe.
Barren	W. M. Totty, Glasgow.
Bath	R. W. Kincaid, Owingsville.
Bell	Mary A. Helton, Pineville.
Boone	J. C. Gordon, Burlington.
Bourbon	J. B. Caywood, Paris.
Boyd	B. B. Triplett, Catlettsburg.
Boyle	Oscar B. Fallis, Danville.
Bracken	Nannie Hancock, Brooksville.
Breathitt	Fallen Campbell, Jackson.
Breckinridge	J. Raleigh Meader, Hardinsburg.
Bullitt	Ora L. Roby, Shepherdsville.
Butler	C. E. Gary, Morgantown.
Caldwell	H. W. Nichols, Princeton.
Calloway	R. E. Broach, Murray.
Campbell	J. W. Reiley, Alexandria.
Carlisle	N. J. Parsons, Bardwell.
Carroll	Clay Tharp, Carrollton.
Carter	Lella B. Wilcox, Grayson.
Casey	E. L. Cundiff, Liberty.
Christian	L. E. Foster, Hopkinsville.
Clark	Nancy Stevenson, Winchester.
Clay	Davis M. Allen, Manchester.
Clinton	J. O. Cole, Albany.
Crittenden	James L. F. Paris, Marion.
Cumberland	Cora S. Payne, Burkesville.
Daviess	John L. Graham, Owensboro.
Edmonson	W. A. Pardue, Brownsville.
Elliott	Wales S. Brown, Sandy Hook.
Estill	E. S. Land, Irvine.
Fayette	Geo. M. Baker, Lexington.
Fleming	M. N. Evans, Flemingsburg.
Floyd	H. N. Cooley, Prestonburg.
Franklin	L. D. Stucker, Frankfort.
Fulton	Inez Luten, Hickman.
Gallatin	Rosa B. Wood, Warsaw.
Garrard	Jennie Higgins, Lancaster.
Grant	B. N. Harrison, Williamstown.
Graves	J. E. Coleman, Mayfield.
Grayson	Effie Sadler Basham, Leitchfield.
Green	Myrtle F. Howard, Greensburg.
Greenup	J. Howard Hatfield, Greenup.
Hancock	J. H. Lamb, Hawesville.
Hardin	J. A. Payne, Elizabethtown.
Harlan	A. C. Jones, Harlan.
Harrison	B. F. Kearns, Cynthiana.
Hart	Mrs. Annie Turner, Mumfordville.
Henderson	E. B. Liles, Henderson.
Henry	Hallie Ellis Pope, Newcastle.
Hickman	J. W. Brinkley, Clinton.
Hopkins	L. R. Ray, Madisonville.
Jackson	H. F. Minter, McKee.
Jefferson	Orville J. Stivers, Louisville.
Jessamine	C. C. Sandusky, Nicholasville.
Johnson	Fred Meade, Paintsville.
Kenton	J. C. Mills, Erlanger.
Knott	Adam Campbell, Hindman.
Knox	E. B. Hemphill, Barbourville.
Larue	Sara Castleman McConnell, Hodgenville.

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III.—County and Other Local Superintendents of Schools—Continued.

County.	County superintendent.
KENTUCKY—con.	
Laurel	D. B. Johnson, London.
Lawrence	J. H. Ekers, Louisa.
Lee	J. P. Thomas, Beattyville.
Leslie	Mary H. Feltner, Hyden.
Letcher	E. B. Hale, Whitesburg.
Lewis	J. Q. Adams, Vanceburg.
Lincoln	Garland Singleton, Stanford.
Livingston	Mamie Y. Ferguson, Smithland.
Logan	R. N. Beauchamp, Russellville.
Lyon	N. G. Martin, Eddyville.
Madison	Ben F. Edwards, Richmond.
Magoffin	J. S. Adams, Salyersville.
Marion	J. W. Clarkson, Lebanon.
Marshall	Harry W. Peters, Benton.
Martin	U. G. Johnson, Inez.
Mason	G. H. Turnipseed, Maysville.
McCracken	M. V. Miller, Paducah.
McCreary	J. L. Harmon, Whitley City.
McLean	R. M. Stroud, Calhoun.
Meade	L. H. Powell, Brandenburg.
Menifee	W. O. Back, Frenchburg.
Mercer	Ora L. Adams, Harrodsburg.
Metcalfe	Avery Sartin, Edmondton.
Monroe	Mrs. Ella Braswell, Tompkinsville.
Montgomery	Georgie V. Sledd, Mount Sterling.
Morgan	Bernard E. Whitt, West Liberty.
Muhlenburg	M. C. Hughes, Greenville.
Nelson	W. T. McClain, Bardstown.
Nicholas	Eda S. Taylor, Carlisle.
Ohio	E. S. Howard, Hartford.
Oldham	J. W. Selph, La Grange.
Owen	Mrs. Clara A. Jones, Owenton.
Owsley	A. J. Creech, Booneville.
Pendleton	John E. Drake, Falmouth.
Perry	M. C. Napier, Hazard.
Pike	Fonso Wright, Pikeville.
Powell	Maude S. Bowen, Stanton.
Pulaski	Leonard E. Meece, Somerset.
Robertson	Cleveland Moore, Mount Olivet.
Rockcastle	Alice Davis, Mount Vernon.
Rowan	J. H. Powers, Morehead.
Russell	B. A. Lawless, Jamestown.
Scott	Mary Bradley, Georgetown.
Shelby	Mrs. M. L. Hall, Shelbyville.
Simpson	Alice Adams, Franklin.
Spencer	Katie B. Beauchamp, Taylorsville.
Taylor	Geo. E. Sapp, Campbellsville.
Todd	H. G. Watson, Elkton.
Trigg	Levi Cunningham, Cadiz.
Trimble	Carrie Logan Hood, Bedford.
Union	G. W. Curry, Morganfield.
Warren	W. P. White, Bowling Green.
Washington	Simpson Roberts, Springfield.
Wayne	Hattie Denney, Monticello.
Webster	Thos. W. Johnson, Dixon.
Whitley	Samuel Walker, Williamsburg.
Wolfe	Taylor Shockey, Campton.
Woodford	M. B. Hifner, Versailles.

Parish.	Parish superintendent.
LOUISIANA.	
Acadia	J. M. Baker, Crowley.
Allen	R. G. Corkern, Oberlin.
Ascension	H. P. Broussard, Donaldsonville.
Assumption	S. A. Alleman, Napoleonville.
Avoyelles	C. E. Laborde, Marksville.
Beauregard	D. G. Lunsford, De Ridder.
Bienville	E. H. Fisher, Arcadia.
Bossier	R. V. Kerr, Benton.
Caddo	C. E. Byrd, Shreveport.
Calcasieu	F. K. White, Lake Charles.
Caldwell	E. B. Cottingham, Columbia.
Cameron	T. W. McCall, Grand Chenier.
Catahoula	H. W. Wright, Jonesville.
Claiborne	John S. Patton, Homer.
Concordia	D. C. Strickler, Vidalia.
De Soto	G. O. Houston, Mansfield.
East Baton Rouge	W. B. Hatcher, Baton Rouge.
East Carroll	Ashley Warlick, Lake Providence.
East Feliciana	E. R. Waller, Clinton.
Evangeline	Y. L. Fontenot, Ville Platte.
Franklin	J. L. McDuff, Winnsboro.
Grant	J. B. Coburn, Colfax.
Iberia	L. G. Porter, New Iberia.
Iberville	L. E. Messick, Plaquemine.
Jackson	Geo. A. Odom, Jonesboro.
Jefferson	J. C. Ellis, Gretna.
Jefferson Davis	W. P. Arnette, Jennings.
Lafayette	A. W. Bittle, Lafayette.
Lafourche	W. S. Lafargue, Thibodaux.
La Salle	W. T. Hodges, Jena.
Lincoln	H. L. Campbell, Ruston.
Livingston	E. S. Easterly, Denham Springs.
Madison	J. R. Linton, Tallulah.
Morehouse	S. A. Caldwell, Bastrop.
Natchitoches	C. E. Hooper, Natchitoches.
Orleans	J. M. Gwinn, New Orleans.
Ouachita	T. O. Brown, Monroe.
Plaquemines	A. L. Pourciau, Pointe a la Hache.
Pointe Coupee	Alonzo McFarland, New Roads.
Rapides	W. J. Avery, Alexandria.
Red River	A. H. Horton, Coushatta.
Richland	E. E. Keebler, Rayville.
Sabine	G. C. Reeves, Many.
St. Bernard	Clement Story, St. Bernard.
St. Charles	J. B. Martin, Hahnville.
St. Helena	Chas. W. Price, Greensburg.
St. James	J. N. Gourdain, Convent.
St. John the Baptist.	L. F. Laurent, Edgard.
St. Landry	W. B. Prescott, Opelousas.
St. Martin	W. C. Perrault, St. Martinville.
St. Mary	L. A. Law, Franklin.
St. Tammany	E. E. Lyon, Covington.
Tangipahoa	W. A. Sisemore, Amite.
Tensas	C. L. Barrow, St. Joseph.
Terrebonne	H. L. Bourgeois, Houma.
Union	J. N. Warner, Farmerville.
Vermilion	J. H. Williams, Abbeville.
Vernon	Finly Stanly, Leesville.
Washington	D. H. Stringfield, Franklinton.
Webster	E. S. Richardson, Minden.
West Baton Rouge	J. H. Bres, Port Allen.
West Carroll	W. S. Campbell, Oak Grove.
West Feliciana	P. C. Garris, St. Francisville.
Winn	A. L. Allen, Winnfield.

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III.—County and Other Local Superintendents of Schools—Continued.

Towns in union.	Union superintendent.
MAINE.	
Abbot, Blanchard, Elliottsville Pl., Kingsbury Pl., Monson, Willimantic.	Claude L. Sidelinger, Monson.
Acton, Lebanon, Newfield, Shapleigh.	George M. D. Grant, East Lebanon.
Addison, Centerville, Jonesboro, Jonesport.	Ralph W. Brown, Jonesport.
Albany, Lovell, Stoneham, Sweden.	W. H. Edminster, South Stoneham.
Albion, Burnham, Troy, Unity, Unity Pl.	Mrs. Naomi T. Gregoire, Unity.
Alexander, Codyville Pl., Crawford, Grand Lake Str. Pl., No. 21 Pl. (Wash.), Princeton, Talmadge, Waite, Topsfield.	George H. Beard, Princeton.
Alfred, Limerick, Lyman, Waterboro.	M. E. Wright, Alfred.
Allagash Pl., Fort Kent, St. Francis Pl., St. John Pl.	Catherine Ouellette, Fort Kent.
Alna, Dresden, Edgecomb, Pittston, Wiscasset.	Leslie A. Bailey, Dresden Mills.
Alton, Argyle, Lagrange, Medford, Orneville.	E. E. Harris, Lagrange.
Amherst, Aurora, Clifton, Mariaville, No. 21 Pl., No. 33 Pl., Otis, Waltham.	Mrs. Carolyn Orcutt, Amherst.
Amity, Cary Pl., Hodgdon, Linneus, New Limerick.	W. E. Finch, Hodgdon.
Andover, Byran, Mexico, Roxbury.	Russell Morgrage, Ridlonville.
Anson, Bingham, Embden, Solon.	Mrs. L. A. Bradbury, North Anson.
Appleton, Liberty Palermo, Washington.	Albert F. Barnes, Appleton.
Arrowsic, Georgetown, Phippsburg, Westport, Woolwich.	Mrs. Clara M. Reed, Woolwich.
Ashland, Garfield Pl., Masardis, Nashville Pl., Oxbow Pl., Portage Lake.	W. G. Hoyt, Ashland.
Athens, Brighton Pl., Cambridge, Cornville, Harmony.	E. A. Pattee, Harmony.
Atkinson, Bradford, Charleston, Corinth, Kenduskeag.	H. D. Ridlon, Charleston.
Avon, Freeman, Phillips, Salem, Strong.	A. L. Shorey, Phillips.
Baileyville, Baring, Calais.	W. H. Phinney, Calais.
Baldwin, Hiram, Sebago.	Mrs. Celia H. Sanborn, East Hiram.
MAINE—contd.	
Bancroft, Drew Pl., Glenwood Pl., Haynesville, Kingman, Macwahoc Pl., Reed Pl.	C. S. Hulbert, Wytopitlock.
Bar Harbor, Trenton.	Frank McGouldrick, Bar Harbor.
Barnard Pl., Brownville, Lake View Pl., Milo, Williamsburg.	W. H. Sturtevant, Milo.
Bath, West Bath..	C. L. Smith, Bath.
Beddington, Cherryfield, Columbia Falls, Deblois, Steuben.	Mrs. Frances C. Jewett, Cherryfield.
Belfast, Searsport.	E. E. Roderick, Belfast.
Belgrade, Fayette, Mount Vernon, Readfield.	Ralph G. Oakes, Readfield.
Belmont, Lincolnville, Morrill, Northport, Searsmont.	Mrs. Lena Rankin, Lincolnville.
Benedicta, Hersey, Mount Chase, Patten, Stacyville Pl.	Mrs. Lucy P. Leach, Patten.
Benton, Fairfield..	M. C. Joy, Fairfield.
Berwick, Eliot, South Berwick.	W. C. McCue, Berwick.
Bethel, Gilead, Greenwood, Mason.	F. E. Russell, Bethel.
Bigelow Pl., Coplin Pl., Dead River Pl., Eustis, Flagstaff Pl., Lang Pl.	C. W. Dickey, Stratton.
Blaine, Bridgewater, E. Plantation, Mars Hill, Monticello.	Fred C. English, Robinson.
Bluehill, Brooklin, Sedgwick.	E. L. Linscott, Bluehill.
Boothbay, Boothbay Harbor, Monhegan Pl., Southport.	Elmer C. Vining, Boothbay Harbor.
Bowdoin, Bowdoinham, Richmond.	Chas. A. Snow, Richmond.
Bowerbank, Dover, Foxcroft, Sebec.	Wm. M. Bottomley, Foxcroft.
Bradley, Greenbush, Greenfield, Milford, Passadumkeag.	Mrs. Gertrude K. Gifford, Olamon.
Bremen, Jefferson, Nobleboro, Waldoboro.	V. V. Thompson, Waldoboro.
Brewer, Eddington, Holden, Veazie.	F. W. Burrill, Brewer.
Bridgton, Harrison, Naples.	Guy Monk, Bridgton.
Bristol, Damariscotta, Newcastle, South Bristol.	Julia E. Barker, Damariscotta.
Brooks, Jackson, Monroe, Swanville, Waldo.	L. T. Dunham, Brooks.
Brooksville, Castine, Islesboro, Penobscot.	D. W. Rollins, Castine.

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III.—County and Other Local Superintendents of Schools—Continued.

Towns in union.	Union superintendent.
MAINE—contd.	
Brookton, Danforth, Forest City, Orient, Vanceboro, Weston.	D. H. Corson, Danforth.
Brownfield, Denmark, Fryeburg, Stow.	C. L. Clement, Fryeburg.
Brunswick, Topsham.	John A. Cone, Brunswick.
Buckfield, Hartford, Hebron, Sumner.	Leon E. Cash, Buckfield.
Bucksport, Orland, Orrington, Verona.	Abbie M. Buck, Orland.
Burlington, Edinburg, Enfield, Grand Falls Pl., Howland, Lowell, Maxfield, Seboeis Pl.	Ralph Nowland, Howland.
Buxton, Hollis, Standish.	Geo. E. Jack, Hollis Center.
Camden, Hope, Thomaston.	George E. Paine, Camden.
Canaan, Clinton, Pittsfield.	T. W. McQuaide, Pittsfield.
Canton, Livermore	F. H. Bate, Canton.
Cape Elizabeth, South Portland.	Simon M. Hamlin, South Portland.
Caratunk Pl., Concord, Mayfield Pl., Moscow, Pleasant Ridge Pl., The Forks Pl., West Forks Pl.	Charles E. Ball, Bingham.
Caribou, Limestone.	C. A. Grant, Caribou.
Carmel, Dixmont, Etna, Newburg.	John Paton, Carmel.
Carroll, Lakeville Pl., Lee, Prentiss, Springfield, Webster Pl.	H. E. Fortier, Springfield.
Carthage, Dixfield, Peru, Weld.	H. W. Coburn, Dixfield.
Casco, Otisfield, Raymond.	Howard Gilpatrick, Casco.
Castle Hill, Chapman, Mapleton.	Elmer H. Webber, Mapleton.
Charlotte, Cooper, Dennysville, Edmunds, Marion, Meddybemps, No. 14 Pl., Pembroke.	J. B. Thompson, West Pembroke.
Chelsea, Somerville, Whitefield, Windsor.	Mrs. Lila N. Leavitt, Coopers Mills.
Chester, Lincoln, Mattawamkeag, Winn, Woodville.	Charles Swan, Mattawamkeag.
Chesterville, Industry, New Sharon, Vienna.	S. T. Marshall, New Sharon.
China, Vassalboro, Winslow.	E. L. Toner, North Vassalboro.
Columbia, Harrington, Milbridge.	Ray Robinson, Harrington.
Corinna, Detroit, Newport, Plymouth.	Clifton E. Wass, Newport.
Cornish, Limington, Parsonsfield, Porter.	Annie L. Swasey, Cornish.
MAINE—contd.	
Cranberry Isles, Mount Desert, Southwest Harbor, Tremont.	W. E. Clark, Southwest Harbor.
Criehaven Pl., Matinicus Isle Pl., Union, Warren,	F. D. Rowe, Warren.
Crystal, Island Falls, Sherman, Silver Ridge Pl.	H. A. McLellan, Island Falls.
Cumberland, Falmouth, North Yarmouth.	D. W. Lunt, Portland, R. 4.
Cushing, Friendship, St. George, South Thomaston.	Edw. M. Tucker, Tenants Harbor.
Cutler, Lubec, Trescott, Whiting.	Everett Higgins, Lubec.
Cyr Pl., Hamlin Pl., Van Buren.	C. L. O'Connell, Van Buren.
Dallas Pl., Madrid, Rangeley, Rangeley Pl., Sandy River Pl.	Mrs. Harriet Fenderson, Rangeley.
Dayton, North Kennebunkport, Saco.	T. T. Young, Saco.
Dedham, Ellsworth, Surry.	H. E. Henry, Ellsworth.
Deer Isle, Isle au Haut, Stonington.	C. E. Lord, Deer Isle.
Dennistown Pl., Greenville, Jackman Pl., Long Pond Pl., Moose River Pl., Shirley.	Russell S. Taylor, Greenville.
Dexter, Garland, Ripley.	Jas. A. Hamlin, Dexter.
Durham, Lisbon, Webster.	A. R. Carter, Lisbon Falls.
Dyer Brook, Ludlow, Merrill, Moro Pl., Oakfield, Smyrna.	W. E. Lane, Smyrna Mills.
Eagle Lake, New Canada Pl., Wallagrass Pl., Winterville Pl.	Emma Pinette, Eagle Lake.
Eastbrook, Franklin, Hancock, Lamoine.	S. S. Scammon, Franklin.
East Livermore, Wayne.	E. R. Bowdoin, Livermore Falls.
East Machias, Machias, Machiasport, Marshfield, Northfield, Roque Bluffs, Whitneyville.	R. L. Sinclair, Machias.
East Millinocket, Medway, Millinocket.	W. M. Marr, Millinocket.
Easton, Fort Fairfield.	C. E. Glover, Fort Fairfield.
Eastport, Perry, Robbinston.	Mrs. Eunice M. Beale, Eastport.
Exeter, Glenburn, Hudson, Levant, Stetson.	Erl Worcester, Kenduskeag.
Farmingdale, Gardiner, Randolph.	L. W. Gerrish, Gardiner.
Farmington, New Vineyard, Temple.	Wm. C. Webster, Farmington.

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III.—County and Other Local Superintendents of Schools—Continued.

Towns in union.	Union superintendent.	Towns in union.	Union superintendent.
MAINE—contd.		MAINE—contd.	
Frankfort, Prospect, Stockton Springs, Winterport.	Frederick Nickerson, Frankfort.	Jay, Wilton.....	H. R. Houston, North Jay.
		Kennebunk, Kennebunkport.	M. T. Goodrich, Kennebunk.
Freedom, Knox, Montville, Thorndike.	D. H. Mathieson, Liberty.	Lincoln Pl., Magalloway Pl., Newry, Upton.	Mrs. Hazel Linnell, Upton.
Freeport, Pownal, Yarmouth.	Frank H. Byram, Yarmouthville.	Litchfield, Monmouth, Wales, West Gardiner.	Everett Peacock, Litchfield.
Frenchville, Grand Isle, Madawaska, St. Agatha.	B.S. Dufour, St. Agatha.	Long Island Pl., North Haven, Swans Island, Vinalhaven.	Edward A. Smalley, Vinalhaven.
Gouldsboro, Sorrento, Sullivan, Winter Harbor.	Elmer B. Eddy, West Gouldsboro.	Mechanic Falls, Minot, Poland.	Mrs. Harriet M. Spiller, Mechanic Falls.
Gray, New Gloucester, Windham.	C. E. Varney, Gray.	Mercer, Norridgewock, Smithfield, Starks.	Ed. A. Simoneau, Norridgewock.
Greene, Leeds, Turner.	R. W. Blaisdell, Turner Center.	New Sweden, Stockholm, Westmanland Pl., Woodland.	Elfrida Neilander, Caribou, R. F. D. No. 4.
Guilford, Parkman, Sangerville, Wellington.	Walter J. Rideout, Guilford.	North Berwick, Wells.	C. A. Rush, North Berwick.
Hallowell, Manchester, Winthrop.	W. F. Packard, Winthrop.	Norway, Oxford, Waterford.	W. E. Stuart, Norway.
		Oakland, Rome, Sidney.	John S. Tapley, Oakland.
Hammond Pl., Houlton, Littleton.	T. P. Packard, Houlton.	Old Orchard, Scarboro.	F. H. B. Heald, South Portland, R. 6.
		Paris, Woodstock.	A. B. Garcelon, South Paris.
Hampden, Hermon.	C. H. Grant, Hermon.	Perham, Wade, Washburn.	George M. Carter, Washburn.
Hanover, Milton Pl., Rumford.	L. E. Williams, Rumford.	Presque Isle, Westfield.	Harry Rollins, Presque Isle.
Hartland, Palmyra, St. Albans.	H. B. Clifford, Hartland.	Rockland, Rockport.	Harry C. Hull, Rockland.
Highland Pl., Kingfield, Lexington Pl., New Portland.	C. J. Dunlap, Kingfield.		

County.	County superintendent.	County.	County superintendent.
MARYLAND.		MARYLAND—con.	
Allegany.....	Edward F. Webb, Cumberland.	Howard.....	W. C. Phillips, Ellicott City.
		Kent.....	Edward J. Clarke, Chestertown.
Anne Arundel.....	George Fox, Annapolis.		
Baltimore.....	Clarence G. Cooper, Towson.	Montgomery.....	Edwin W. Broome, Rockville.
Calvert.....	Howard T. Ruhl, Prince Frederick.	Prince Georges....	Nicholas Orem, Upper Marlboro.
Caroline.....	E. M. Noble, Denton.	Queen Annes.....	T. G. Bennett, Centerville.
Carroll.....	M. S. H. Unger, Westminster.	St. Marys.....	G. W. Joy, Leonardtown.
Cecil.....	Hugh W. Caldwell, Elkton.	Somerset.....	Wm. H. Dashiell, Princess Anne.
Charles.....	F. Bernard Gwynn, La Plata.		
Dorchester.....	J. B. Noble, Cambridge.	Talbot.....	Oscar M. Fogle, Easton.
Frederick.....	G. Lloyd Palmer, Frederick.	Washington.....	B. J. Grimes, Hagerstown.
Garrett.....	F. E. Rathbun, Oakland.	Wicomico.....	James M. Bennett, Salisbury.
Harford.....	C. Milton Wright, Bel Air.	Worcester.....	E. W. McMaster, Snow Hill.

Towns in union.	Union superintendent.	Towns in union.	Union superintendent.
MASSACHUSETTS.		MASSACHUSETTS—continued.	
Acton, Carlisle, Littleton, Westford.	Herman C. Knight, Littleton.	Amherst, Pelham.	Jason O. Cook, Amherst.
		Ashburnham, Winchendon.	Austin R. Paull, Winchendon.
Acushnet, Fairhaven, Marion, Mattapoisett.	Charles F. Prior, Fairhaven.	Ashby, Lunenburg, Townsend.	John Bacon, Townsend.
Agawam, Ludlow.	Walter E. Gushee, Ludlow.		
Alford, Egremont, Richmond, West Stockbridge.	Theodore F. Cooke, Richmond.	Ashfield, Cummington, Goshen, Plainfield.	Millard C. Moore, Ashfield.

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III.—County and Other Local Superintendents of Schools—Continued.

Towns in union.	Union superintendent.
MASSACHUSETTS—contd.	
Ashland, Hopkinton.	Warren B. Lyman, Hopkinton.
Auburn, Sutton...	Henry H. Pratt, 1232 Main Street, Worcester.
Avon, Holbrook, Randolph.	Adolph C. Christiansen, Holbrook.
Ayer, Boxborough, Shirley.	Frank C. Johnson, Ayer.
Barre, Hardwick, Petersham.	Merle A. Sturtevant, Barre.
Becket, Chester, Middlefield.	William E. Hebard, Chester.
Bedford.....	Arthur B. Webber, Bedford.
Belchertown, Enfield.	Alvin R. Lewis, Belchertown.
Bellingham, Hopedale, Mendon.	Carroll H. Drown, Hopedale.
Berkley, Dighton, Rehoboth.	Walter K. Putney, North Dighton.
Berlin, Northboro. Southboro.	Frederick B. Van Ornum, Northboro.
Bernardston, Gill, Leyden, Northfield, Warwick.	E. J. Best, Northfield.
Billerica, Burlington.	Eugene C. Vining, Billerica.
Blackstone, Millville, Seekonk.	Leon E. Davis, Millville.
Blandford, Huntington, Montgomery, Russell.	Melvin J. West, Huntington.
Bolton, Dunstable, Harvard, Pepperell.	George B. Clarke, East Pepperell.
Bourne, Mashpee, Sandwich.	Herbert L. Whitman, Bourne.
Boxford, Middleton, Wilmington.	Ralph H. Barr, North Wilmington.
Boylston, Shrewsbury, West Boylston.	Chester R. Stacy, Shrewsbury.
Brewster, Dennis, Yarmouth.	Alberto W. Small, Yarmouth.
Brimfield, Monson.	Francis S. Brick, Monson.
Brookfield, East Brookfield, North Brookfield.	Edward C. Hempel, North Brookfield.
Buckland, Colrain, Shelburne.	Frank P. Davison, Shelburne Falls.
Carver, Lakeville, Rochester.	W. J. B. MacDougall, South Middleboro.
Charlemont, Hawley, Heath, Rowe.	Orion A. Morton, Charlemont.
Charlton, Leicester.	Theodore W. King, Leicester.
Chatham, Eastham, Harwich, Orleans.	Loring G. Williams, Harwich.
Cheshire, Hancock, Lanesboro, New Ashford.	Everett G. Loring, Lanesboro.
Chesterfield, Williamsburg, Worthington.	Lucius A. Merritt, Chesterfield.
Chilmark, Edgartown, Gay Head, Oak Bluffs, Tisbury, West Tisbury.	Robert W. Martin, Vineyard Haven.
Clarksburg, Florida, Monroe, Savoy.	D. F. Carpenter, 32 Meadow Street, North Adams.
Cohasset, Hingham.	Orvis K. Collins, Hingham.
MASSACHUSETTS—condt.	
Conway, Deerfield, Sunderland, Whately.	Andrew S. Thomson, South Deerfield.
Dana, Greenwich, New Salem, Prescott.	Arthur W. Smith, North Dana.
Douglas, Uxbridge.	C. L. Judkins, Uxbridge.
Dover, Sudbury, Wayland.	Frank H. Benedict, Cochituate.
Dracut, North Reading, Tewksbury, Tyngsboro.	Charles L. Randall, 97 Eighteenth Street, Lowell.
Dudley, Webster.	William F. Sims, Webster.
Duxbury, Marshfield, Scituate.	Frederick E. Bragdon, North Scituate.
Easthampton, Southhampton, Westhampton.	William D. Miller, Easthampton.
East Longmeadow, Hampden, Longmeadow, Wilbraham.	Frederic A. Wheeler, East Longmeadow.
Erving, Leverett, Shutesbury, Wendall.	Mrs. Cora A. Stearns, Millers Falls.
Essex, Hamilton, Lynnfield, Topsfield, Wenham.	Arthur B. Lord, Wenham.
Foxboro, Norton, Plainville.	Ira A. Jenkins, Foxboro.
Franklin, Wrentham.	Arthur W. Hale, Franklin.
Freetown, Goenold, Westport.	Edward L. Hill, Assonet.
Georgetown, Groveland, Rowley.	Geo. E. Caswell, Georgetown.
Grafton, Upton...	Albert S. Cole, Grafton.
Granby, South Hadley.	Frederick E. Whittemore, South Hadley Falls.
Granville, Sandisfield, Southwick, Tolland.	Wm. H. Sanderson, Granville.
Hadley, Hatfield..	Clinton T. Richards, Northampton.
Halifax, Kingston, Pembroke, Plympton.	Mrs. Julia Morton, Bryantville.
Hanover, Hanson, Norwell.	Stephen G. Bean, West Hanover.
Hinsdale, Peru, Washington, Windsor.	David J. Malcom, Hinsdale.
Holden, Oakham, Paxton, Rutland.	James R. Childs, Holden.
Holland, Wales, Warren.	Hermann G. Patt, Warren.
Holliston, Medway, Sherborn.	C. Edward Fisher, Holliston.
Hubbardston, Phillipston, Royalston, Templeton.	Asa M. Jones, Baldwinsville.
Lee, Monterey, Otis, Tyringham.	Clarence E. Michels, Lee.
Maynard, Stow...	W. H. Millington, Maynard.
Medfield, Millis, Norfolk, Westwood.	A. S. Ames, Medfield.
Merrimac, Newbury, Salisbury, West Newbury.	Herman N. Knox, Newburyport.

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III.—County and Other Local Superintendents of Schools—Continued.

Town in union.	Union superintendent.
MASSACHUSETTS—continued.	
Millbury, Oxford..	Chauncey C. Ferguson, Millbury.
Mount Washington, New Marlboro, Sheffield.	Luman R. Bowdish, Sheffield.
New Braintree, Sturbridge, West Brookfield.	Charles C. Richardson, West Brookfield.
Princeton, Sterling, Westminster.	Guy W. Vail, Princeton.
Provincetown, Truro, Wellfleet.	C. M. Pennell, Provincetown.
Raynham, West Bridgewater.	Thomas E. Gay, West Bridgewater.
Somerset, Swansea.	Frederick W. Kingman.

County.	County commissioner.
MICHIGAN.	
Alcona	George R. Emerick, Harrisville.
Alger	Earle H. Sortore, Munising.
Allegan	Mrs. C. L. Goodrich, Allegan.
Alpena	Oscar J. Carr, Alpena.
Antrim	Kate A. Wilson, Bellaire.
Arenac	Lena Herman, Standish.
Baraga	Elna E. Nelson, Baraga.
Barry	Gertrude R. Miller, Hastings.
Bay	J. B. Laing, Bay City.
Benzie	Jay S. Pettitt, Benzonia.
Berrien	Mrs. E. H. Cole, St. Joseph.
Branch	L. L. Livermore, Coldwater.
Calhoun	D. A. Davis, Marshall.
Cass	Geneva M. Ratliff, Dowagiac.
Charlevoix	May L. Stewart, Boyne City.
Cheboygan	Arthur L. Martin, Cheboygan.
Chippewa	T. B. Aldrich, Sault Ste. Marie.
Clare	George E. Bersette, Harrison.
Clinton	Mattie Smith, St. Johns.
Crawford	Marguerite Hoyt, Frederic.
Delta	C. U. Woolpert, Escanaba.
Dickinson	D. O'Hara, Iron Mountain.
Eaton	Cynthia A. Green, Charlotte.
Emmet	Anson H. Washburn, Petoskey.
Genessee	John L. Riegle, Flint.
Gladwin	Susie F. Booth, Gladwin.
Gogebic	John C. Watson, Ironwood.
Grand Traverse	Lee Hornsby, Traverse City.
Gratiot	H. A. Potter, Ithaca.
Hillsdale	Robert C. Young, Hillsdale.
Houghton	J. Bettens, Houghton.
Huron	W. H. Sparling, Bad Axe.
Ingham	Daisy I. Call, Mason.
Ionia	J. Calvin Linebaugh, Ionia.
Iosco	Ina M. Bradley, Tawas City.
Iron	John F. Mason, Crystal Falls.
Isabella	Malcolm Crawford, Mount Pleasant.
Jackson	W. W. McLain, Jackson.
Kalamazoo	Mary Ensfield, Kalamazoo.
Kalkaska	Irene Louise Getty, Kalkaska.
Kent	A. M. Freeland, Grand Rapids.
Keweenaw	H. S. Winter, Mohawk.
Lake	Edwin G. Johnson, Luther.
Lapeer	C. H. Naylor, Lapeer.
Leelanau	H. R. Dumbrille, Glen Arbor.
Lenawee	G. J. Tripp, Adrian.
Livingston	E. Alma Sharpe, Howell.
Luce	Mrs. Ann I. Auten, Newberry.
Mackinac	James E. Quinlan, St. Ignace.
Macomb	Will L. Lee, Mount Clemens.
Manistee	Elbert Gerred, Manistee.
Marquette	S. R. Anderson, Marquette.
Mason	C. A. Rinehart, Scottville.
Mecosta	LeRoy Bell, Big Rapids.
Menominee	James A. Muma, Menominee.
Midland	B. G. Scollay, Midland.
Missaukee	Lydia Ripatte, Lake City.
Monroe	John G. Schafer, Monroe.
Montcalm	E. Straight, Stanton.
Montmorency	David W. Farrier, Hillman.
Muskegon	Mrs. Nellie B. Chisholm, Muskegon.
Newaygo	Carrie L. Carter, Fremont.
Oakland	A. L. Craft, Pontiac.
Oceana	Angeline London, Hart.
Ogemaw	Josephine Woods, West Branch.
Ontonagon	A. C. Adair, Rockland.
Osceola	Otto J. Heber, Reed City.
Oscoda	George L. Fowler, Mio.
Otsego	Sim J. Lewis, Johannesburg.
Ottawa	N. R. Stanton, Holland.
Presque Isle	Martha A. Caldwell, Onaway.
Roscommon	W. M. Coon, Roscommon.
Saginaw	Mrs. Evangeline G. Tefft, Saginaw, W. S.
St. Clair	E. T. Blackney, Port Huron.
St. Joseph	Lewis Miller, Centerville.
Sanilac	W. J. Musselman, Sandusky.
Schoolcraft	W. T. S. Cornell, Manistique.
Shiawasse	H. E. Slocum, Corunna.
Tuscola	B. H. McComb, Caro.
Van Buren	E. V. Root, Paw Paw.
Washtenaw	Evan Essery, Ann Arbor.
Wayne	E. W. Yost, Detroit.
Wexford	Roy Noteware, Cadillac.

County.	County superintendent.
MINNESOTA.	
Aitkin	Iva Poston, Aitkin.
Anoka	Mrs. C. Lenfest, Anoka.
Becker	Anna G. Rogstad, Detroit.
Beltrami	J. C. McGhee, Bemidji.
Benton	Agnes K. Burns, Foley.
Bigstone	Martha Rothwell, Ortonville.
Blue Earth	W. H. Detamore, Mankato.
Brown	Robt. B. Kennedy, New Ulm.
Carlton	Nora A. Nilsen, Moose Lake.
Carver	F. L. Williams, Watertown.
Cass	R. F. Ross, Walker.
Chippewa	Oline Rolighed, Montevideo.
Chisago	E. J. Cederholm, Lindstrom.
Clay	S. O. Tang, Moorhead.
Clearwater	Mrs. Mae Barragy Barsness, Bagley.
Cook	Wm. J. Clinch, Grand Marais.
Cottonwood	Ernest Turner, Windom.
Crow Wing	Irma C. Hartley, Brainerd.
Dakota	Josephine Raetz, Hastings.
Dodge	Zena Cooper, Mantorville.
Douglas	Eva E. Wold, Alexandria.
Faribault	Eva Jones, Blue Earth.
Fillmore	Cora Bigelow, Preston.
Freeborn	Harold Dahlen, Albert Lea.
Goodhue	Mollie Remshardt, Red Wing.
Grant	Blanche L. Brennin, Elbow Lake.
Hennepin	Mrs. May H. Dills, Minneapolis.
Houston	Mary W. Dorival, Caledonia.
Hubbard	D. R. Bradford, Park Rapids.
Isanti	Mrs. M. B. Hixson, Cambridge.

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III.—County and Other Local Superintendents of Schools—Continued.

County.	County superintendent.
MINNESOTA—con.	
Etasca	Jessie E. Hutchins, Grand Rapids.
Jackson	Nellie R. Rouse, Jackson.
Kanabec	Willis Fairbanks, Mora.
Kandiyohi	O. O. Ulvin, Willmar.
Kittson	Hans Hanson, Hallock.
Koochiching	G. A. Olson, International Falls.
Lacqui Parle	Mrs. Hilda Slind, Madison.
Lake	Mrs. Alice W. Lawrence, Two Harbors.
Lesueur	J. A. Meagher, Lesueur Center.
Lincoln	J. T. Chawson, Ivanhoe.
Lyon	Mrs. Adelaide Whiting Anderson, Marshall.
McLeod	Louire G. Karstens, Glencoe.
Mahnomen	Alice C. Harty, Mahnomen.
Marshall	David Johnson, Warren.
Martin	Minnie Follett, Fairmont.
Meeker	Martha Minor, Litchfield.
Millelacs	Olaf Wasenius, Milaca.
Morrison	Crawford Sheldon, Little Falls.
Mower	Mrs. Eunice L. Rice, Austin.
Murray	Jennie Holm, Slayton.
Nicollet	Albert J. Holmstead, St. Peter.
Nobles	John P. Hoffman, Worthington.
Norman	E. K. Sampson, Ada.
Olmstead	Wm. L. Mercer, Rochester.
Ottertail	Antoinette Henderson, Fergus Falls.
Pennington	Geo. M. Gunderson, Thief River Falls.
Pine	Jens P. Miller, Pine City.
Pipestone	J. R. Campbell, Pipestone.
Polk	N. A. Thorson, Crookston.
Pope	Mrs. Julia Solverud, Glenwood.
Ramsey	Geo. H. Relf, St. Paul.
Red Lake	Erba E. Pouliot, Red Lake Falls.
Redwood	Fern Kennedy, Redwood Falls.
Renville	Amalia M. Bengtson, Olivia.
Rice	J. H. Lewis, Faribault.
Rock	Edia A. Headley, Luverne.
Roseau	Eddy E. Billberg, Roseau.
St. Louis	C. H. Barnes, Duluth.
Scott	H. J. Fitzpatrick, Shakopee.
Sherburne	Mrs. Ada P. Conger, Becker.
Sibley	Martha Beatty, Gaylord.
Stearns	W. A. Boerger, St. Cloud.
Steele	A. E. Kenyon, Owatonna.
Stevens	Ray S. Roberts, Morris.
Swift	Tillie S. Thomason, Benson.
Todd	O. B. De Laurier, Long Prairie.
Traverse	Bessie Caswell, Wheaton.
Wabasha	George H. Booth, Lake City.
Wadena	Austin C. Kennedy, Wadena.
Waseca	H. C. Van Loh, Waseca.
Washington	E. E. Bloomquist, Stillwater.
Watonwan	Mabel Madson, St. James.
Wilkin	Lucile Shirley, Breckenridge.
Winona	A. C. Loomis, Winona.
Wright	Mrs. M. M. Ferrell, Maple Lake
Yellow Medicine	Lue A. Olds, Granite Falls.
MISSISSIPPI.	
Adams	V. Josephine Fitts, Natchez.
Alcorn	W. F. Seago, Corinth.
Amite	J. N. Steele, Liberty.
Attala	F. R. McKinnon, Kosciusko.
Benton	W. T. Renick, Ashland.
Bolivar	A. K. Eckles, Cleveland.
Calhoun	W. W. Hannaford, Pittsboro.
Carroll	D. D. Fullilove, Vaiden.
Chickasaw	Geo. D. Riley, Houston.
Choctaw	C. J. Murphy, Ackerman.
Claiborne	C. A. McAnis, Violet.
Clarke	J. R. Brock, Florence.
Clay	E. H. Walker, West Point.
Coahoma	P. F. Williams, Friars Point.
Copiah	J. Q. Martin, Hazlehurst.
Covington	Alex. Newton, Collins.
De Soto	R. E. L. Morgan, Hernando.
Forrest	J. C. Gay, Hattiesburg.
Franklin	B. H. Lewis, Meadville.
George	W. H. Stinson, Sandersville.
Greene	E. L. Turner, Richton, R. 4.
Grenada	M. McKibben, Grenada.
Hancock	T. E. Kellar, Nicholson.
Harrison	R.V.Temming, Pass Christian.
Hinds	F. M. Coleman, Jackson.
Holmes	G. H. Love, Goodman.
Humphreys	T. D. Rice, Belzoni.
Issaquena	Geo. Robinson, Mayersville.
Itawamba	H. L. Gillespie. Nettleton, R. 4
Jackson	A. L. Flurry, Pascagoula.
Jasper	J. Q. Ritchie, Bay Springs.
Jefferson	M. C. Harper, Fayette.
Jefferson Davis	G. L. Martin, Prentiss.
Jones	C. W. Jenkins, Laurel.
Kemper	W. W. Sheppard, Dekalb.
Lafayette	H. T. Smith, Oxford.
Lamar	L. T. Williamson, Sumrall.
Lauderdale	J. A. Riddell, Lauderdale.
Lawrence	W. L. McGahey, Monticello.
Leake	C. K. Waggoner, Carthage.
Lee	R. A. Gregory, Plantersville.
Leflore	L. S. Rogers, Schlater.
Lincoln	Russell Elzey, Brookhaven
Lowndes	E. A. Stanley, Columbus.
Madison	R. E. Hinton, Canton.
Marion	H. F. Patterson, Spring Cottage.
Marshall	C. H. Curd, Holly Springs.
Monroe	H. G. Howell, Quincy.
Montgomery	W. R. Applewhite, Winona.
Neshoba	R. C. Peebles, Philadelphia.
Newton	E. H. Reynolds, Decatur.
Noxubee	J. G. Chandler, Macon.
Oktibbeha	C. E. Scroggins, Starkville.
Panola	J. E. Johnson, Batesville.
Pearl River	C. E. Bass, Poplarville.
Perry	L. D. Young, New Augusta.
Pike	S. W. Simmons, Magnolia.
Pontotoc	W. G. Henry, Algoma.
Prentiss	J. W. Taylor, Booneville.
Quitman	F. M. Bizzell, Marks.
Rankin	H. B. Barksdale, Fannin.
Scott	O. D. Loper, Forest.
Sharkey	J. N. Hall, Rolling Fork.
Simpson	T. A. Williamson, Magee.
Smith	Allen Caughman, Raleigh.
Stone	Buren Broadus, Wiggins.
Sunflower	W. P. Sanders, Indianola.
Tallahatchie	J. W. McCulloch, Greenville.
Tate	Ira G. Allen, Senatobia.
Tippah	J. E. Pearce, Ripley.
Tishomingo	J. O. Epps, Dennis.
Tunica	W. G. Jaquess, Tunica.
Union	E. Blizzard, Myrtle.
Walthall	J. J. Lee, Tylertown.
Warren	J. H. Culkin, Vicksburg.
Washington	B. L. Hatch, Greenville.
Wayne	J. M. Wilkins, Waynesboro.
Webster	Z. V. Sugg, Bellefontaine.
Wilkinson	John C. Day, Woodville.
Winston	E. C. Lovorn, Louisville.
Yalobusha	C. A. Lawshe, Water Valley.
Yazoo	Tom C. White, Yazoo City.
MISSOURI.	
Adair	P. J. Fowler, Kirksville
Andrew	D. D. Hooper, Savan
Atchison	Sallie V. Grobe, Ro
Audrain	Ed. C. Offutt, Mex
Barry	W. E. Hankins, C
Barton	L. E. Brous, Lam
Bates	A. C. Moreland, B

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III.—County and Other Local Superintendents of Schools—Continued.

County.	County superintendents.
MISSOURI—con.	
Benton	Chas. G. Harvey, Warsaw.
Bollinger	W. M. Welker, Marble Hill.
Boone	Charles E. Northcutt, Columbia.
Buchanan	Fred Roach, St. Joseph.
Butler	S. O. Holloway, Poplar Bluff.
Caldwell	D. N. McClintock, Kingston.
Callaway	J. C. Humphreys, Fulton.
Camden	M. E. Johnson, Linn Creek.
Cape Girardeau	J. T. McDonald, Jackson.
Carroll	Arch M. Earp, Carrollton.
Carter	H. D. Condray, Ellsinore.
Cass	C. A. Burke, Harrisonville.
Cedar	W. H. Riley, Stockton.
Chariton	C. C. Carlstead, Keytesville.
Christian	J. Tom Mapes, Ozark.
Clark	Alberta Callison, Kahoka.
Clay	E. L. Black, Liberty.
Clinton	Mrs. Anna L. Sims, Plattsburg.
Cole	A. H. Sieve, Jefferson City.
Cooper	W. B. Downing, Boonville.
Crawford	Wm. M. Chapman, Steelville.
Dade	R. L. Myers, Greenfield.
Dallas	Benj. F. Rea, Buffalo.
Daviess	Hallie Burton, Gallatin.
Dekalb	Mrs. Lou P. McAdam, Maysville.
Dent	Robert W. Crow, Salem.
Douglas	T. J. Moorhouse, Ava.
Dunklin	E. D. McAnally, Kennett.
Franklin	A. F. Borberg, Union.
Gasconade	A. O. Mann, Hermann.
Gentry	Earle C. Duncan, Albany.
Greene	C. W. McCroskey, Springfield.
Grundy	Elizabeth Brainerd, Trenton.
Harrison	E. Newton Carter, Bethany.
Henry	Kathryn Spangler, Clinton.
Hickory	B. B. Ihrig, Wheatland.
Holt	Norty Lilly, Oregon.
Howard	Luman L. Spry, Fayette.
Howell	Mrs. Carrie A. Preston, West Plains.
Iron	G. W. Hanson, Ironton.
Jackson	L. F. Blackburn, Independence.
Jasper	Walter Colley, Carthage.
Jefferson	R. B. Wilson, Hillsboro.
Johnson	Ernest S. Wood, Warrensburg.
Knox	Mrs. Anna L. Swartz, Edina.
Laclede	G. C. Jones, Lebanon.
Lafayette	Elmer H. White, Lexington.
Lawrence	Harry Moore, Mount Vernon.
Lewis	W. B. Anderson, Monticello.
Lincoln	Zula Thurman, Troy.
Linn	J. F. Hortonstine, Brookfield.
Livingston	J. J. Jordan, Chillicothe.
McDonald	P. M. Collings, Pineville.
Macon	O. L. Cross, Macon.
Madison	W. S. Cooper, Fredericktown.
Maries	George B. John, Vienna.
Marion	L. Francis Nelson, Palmyra.
Mercer	Mrs. Allie Wilson, Princeton.
Miller	H. M. Atwell, Tuscumbia.
Mississippi	Mrs. Clara E. Graham, Charleston.
Moniteau	Charles R. Milburn, California.
Monroe	L. D. Ash, Paris.
Montgomery	W. F. Hupe, Montgomery City.
Morgan	M. Wray Witten, Versailles.
New Madrid	P. J. Stearns, New Madrid.
Newton	W. E. Veerkamp, Neosho.
Nodaway	A. H. Cooper, Maryville.
Oregon	James O. Dotson, Alton.
Osage	Myra O. Reed, Linn.
Ozark	J. B. Huffman, Gainesville.
Pemiscot	Chas. G. Ross, Caruthersville.
Perry	Vera M. Abbott, Perryville.
Pettis	T. R. Luckett, Sedalia.
Phelps	A. Z. Black, Rolla.
Pike	O. A. Wilson, Bowling Green.
Platte	Gertrude A. Fulcher, Platte City.
Polk	Mrs. Mabel Douglas, Bolivar.
Pulaski	J. C. Underwood, Crocker.
Putnam	H. U. G. Turnmire, Unionville.
Ralls	L. C. Northcutt, New London.
Randolph	William Robertson, Huntsville.
Ray	W. T. McGaugh, Richmond.
Reynolds	J. G. Hartman, Centerville.
Ripley	C. N. Pennington, Doniphan.
St. Charles	Benj. H. Jolly, St. Charles.
St. Clair	David W. Denney, Osceola.
St. Francois	J. Clyde Akers, Farmington.
Ste. Genevieve	Vivian Gaty, Ste. Genevieve.
St. Louis	R. G. Russell, Clayton.
Saline	W. C. Fisher, Marshall.
Schuyler	Mrs. Lillie Hollowell, Lancaster.
Scotland	Mrs. Arla Williams, Memphis.
Scott	M. E. Montgomery, Benton.
Shannon	Walter Webb, Birch Tree.
Shelby	Mrs. Myrtle Threlkeld, Shelbyville.
Stoddard	Mrs. C. E. Smith, Bloomfield.
Stone	L. V. Threlkill, Galena.
Sullivan	Blanche Summers, Milan.
Taney	J. W. Bennett, Forsyth.
Texas	James K. Connolly, Houston.
Vernon	Lizzie L. White, Nevada.
Warren	F. W. Kehr, Marthasville.
Washington	Burwell Fox, Potosi.
Wayne	C. E. Burton, Piedmont.
Webster	Herschel F. Case, Marshfield.
Worth	Edna Craven, Grant City.
Wright	Ray Wood, Hartville.
MONTANA.	
Beaverhead	Elizabeth Sutherland, Dillon.
Big Horn	Fay Alderson, Dillon.
Blaine	Elizabeth Crookshanks, Chinook.
Broadwater	Mrs. Daisy D. Miles, Townsend.
Carbon	Florence McIntosh, Red Lodge.
Carter	Glen Westphal, Ekalaka.
Cascade	Jane Keeney, Great Falls.
Chouteau	Mrs. A. H. Kelly, Fort Benton.
Custer	Olive H. Lovett, Miles City.
Daniels	Mabel V. Thayer, Scobey.
Dawson	Camilla Osborne, Glendive.
Deer Lodge	Alice Roney, Anaconda.
Fallon	Mildred Lamb, Baker.
Fergus	Amanda O. Swift, Lewistown.
Flathead	Mary Eckstein, Kalispell.
Gallatin	Lucile Quaw, Bozeman.
Garfield	Lois H. Quinn, Jordan.
Glacier	Mrs. Mary Reagan, Cut Bank.
Golden Valley	Corlie F. Dunster, Ryegate.
Granite	Mrs. Lottie T. Irvine, Philipsburg.
Hill	Elizabeth Ireland, Havre.
Jefferson	Lilah Halford, Boulder.
Judith Basin	Mrs. Emily Myers, Stanford.
Lewis and Clark	Jessie Morgan, Helena.
Liberty	Josephine Leahy, Chester.
Lincoln	Mrs. Carrie M. Spence, Libby.
McCone	Mrs. Mabelle Cobb, Circle.
Madison	Ethel L. Hutton, Virginia City.
Meagher	Mrs. Edith Thomas, White Sulphur Springs.
Mineral	Mrs. Julia O. Goff, Superior.
Missoula	Mrs. Minnie Spurgin, Missoula.
Musselshell	Mrs. Laura Carter, Roundup.
Park	Elsie Mercier, Livingston.
Phillips	Mrs. Isabella Burley, Malta.
Pondera	Lucretia Goff, Conrad.
Powder River	Florence Fitzpatrick, Broadus.
Powell	Florence Hill, Deer Lodge.

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III.—County and Other Local Superintendents of Schools—Continued.

County.	County commissioner.
MONTANA—contd.	
Prairie	Irene Gard, Terry.
Ravalli	Bethel Irwin, Hamilton.
Richland	Mrs. Emogene Lectra, Sidney.
Roosevelt	Mrs. Nina McFarlan, Poplar.
Rosebud	Mrs. Sallie M. Adams, Forsyth.
Sanders	Mrs. Ethel Toulmin, Thompson Falls.
Sheridan	William Moe, Plentywood.
Silver Bow	Mrs. Nellie Small, Butte.
Stillwater	Jennie Moore, Columbus.
Sweet Grass	Inga Solberg, Big Timber.
Teton	Mrs. Edythe Saylor, Chouteau.
Toole	Josephine Moberly, Shelby.
Treasure	Mrs. Lillian Newnes, Hysham.
Valley	Mrs. Olivia Patton, Glasgow.
Wheatland	Bertha Lunceford, Harlowton.
Wibaux	Mrs. Maude B. Wills, Wibaux.
Yellowstone	Frances Miller, Billings.
NEBRASKA.	
Adams	Mrs. Harry E. Schultz, Hastings.
Antelope	C. A. Mohrman, Neligh.
Arthur	Mrs. D. G. Williams, Arthur.
Banner	J. H. Macauley, Harrisburg.
Blaine	A. L. Shamblin, Brewster.
Boone	Bertha M. Sheckler, Albion.
Box Butte	Opal Russell, Alliance.
Boyd	Nellie Mae Edwards, Butte.
Brown	Mrs. Lenna Morris, Ainsworth.
Buffalo	Kathryn Laughlin, Kearney.
Burt	W. T. Poucher, Tekamah.
Butler	Oma L. Cady, David City.
Cass	Alpha Peterson, Plattsmouth.
Cedar	Emma Schwerin, Hartington.
Chase	Mrs. Mae S. O'Connor, Imperial.
Cherry	Edith Adamson, Valentine.
Cheyenne	Anna McFadden, Sidney.
Clay	L. J. Gilkeson, Clay Center.
Colfax	F. J. Vogltance, Schuyler.
Cuming	Emma R. Miller, West Point.
Custer	T. C. Grimes, Broken Bow.
Dakota	Wilfred E. Voss, Dakota.
Dawes	Edna Rincker, Chadron.
Dawson	W. C. Bloom, Lexington.
Deuel	Retta F. Brown, Chappell.
Dixon	W. F. Richardson, Ponca.
Dodge	J. E. Marsh, Fremont.
Douglas	Mabel Johnson, Omaha.
Dundy	Una Richards, Benkelman.
Fillmore	Margaret Haughawaut, Geneva.
Franklin	Pearl O'Neal, Bloomington.
Frontier	Goldie P. Stark, Stockville.
Furnas	G. W. Fletcher, Beaver City.
Gage	Bertha Foster, Beatrice.
Garden	Mrs. Blanche W. Riddile, Oshkosh.
Garfield	Florence Alderman, Burwell.
Gosper	F. W. Montgomery, Elwood.
Grant	Theo. A. Frye, Hyannis.
Greeley	Mrs. Barbara A. O'Malley, Greeley.
Hall	Mrs. Ella M. Kern, Grand Island.
Hamilton	Arthur S. Nelson, Aurora.
Harlan	Frances E. White, Alma.
Hayes	Edgiththa Grant, Hayes Center.
Hitchcock	Evelyn Besack, Trenton.
Holt	Anna Donohoe, O'Neill.
Hooker	J. H. Garrett, Mullen.
Howard	W. G. Baker, St. Paul.
Jefferson	Eva B. Shuman, Fairbury.
Johnson	Helen Wright, Tecumseh.
Kearney	Minnie Norlin, Minden.
Keith	Katherine Feather, Ogalalla.
Keyapaha	Blanche Snyder, Springview.
Kimball	Rachel McElroy, Kimball.
Knox	A. S. Stinson, Center.
Lancaster	Maud Berry, Lincoln.
Lincoln	Aileen Cochran, North Platte.
Logan	A. C. Loshbaugh, Gandy.
Loup	Marcia Smith, Taylor.
McPherson	O. A. Johnson, Tryon.
Madison	N. A. Housel, Madison.
Merrick	Margaret McCutchen, Central City.
Morrill	E. F. Kelley, Bridgeport.
Nance	Chloe Baldridge, Fullerton.
Nemaha	Bess E. Anderson, Auburn.
Nuckolls	Mildred Mauck, Nelson.
Otoe	Chas. Speedie, Nebraska City.
Pawnee	Bertha Kuhlman, Pawnee City.
Perkins	Mrs. Margaret Ballar, Grant.
Phelps	Alice A. Swanson, Holdredge.
Pierce	Marjorie Parminter, Pierce.
Platte	Fred S. Lecron, Columbus.
Polk	Amelia Rasmussen, Osceola.
Red Willow	Geo. D. Curry, McCook.
Richardson	D. H. Weber, Falls City.
Rock	Evlyn W. Towle, Bassett.
Saline	L. J. Bouchal, Wilber.
Sarpy	Bertha Bishop, Papillion.
Saunders	E. A. Adman, Wahoo.
Scotts Bluff	Ada Haldeman, Gering.
Seward	J. C. Greenwood, Seward.
Sheridan	Pearle E. Summers, Rushville.
Sherman	L. H. Currier, Loup City.
Sioux	Vinnie Newell, Harrison.
Stanton	S. E. Eddy, Stanton.
Thayer	H. E. Barbee, Hebron.
Thomas	Mrs. Rosa Salleng, Tredford.
Thurston	Ellen M. Brown, Pender.
Valley	Lelia Mooreman, Ord.
Washington	Mabel Marsh, Blair.
Wayne	Pearl Sewell, Wayne.
Webster	Estelle Ducker, Red Cloud.
Wheeler	Edith Bowler, Bartlett.
York	T. C. Lord, York.

Counties in district.	District superintendent.
NEVADA.	
District No. 1: Elko	E. E. Franklin, Elko.
District No. 2: Eureka, Lander, White Pine.	Geo. A. Whiteley, Ely.
District No. 3: Churchill, Humboldt, Pershing.	T. W. Chapman, Fallon.
NEVADA—contd.	
District No. 4: Douglas, Lyon, Mineral, Ormsby, Storey, Washoe.	M. J. Burr, Carson City.
District No. 5: Clark, Esmeralda, Lincoln, Nye.	Maude Frazier, Las Vegas.

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III.—County and Other Local Superintendents of Schools—Continued.

Towns in union.	Union superintendent.
NEW HAMPSHIRE.	
Acworth, Charlestown, Langdon, Lempster, Marlow.	H. Lawton Chase, Charlestown.
Albany, Madison, Sandwich, Tamworth.	Frank W. Jackson, Madison.
Alexandria, Bridgewater, Bristol, Groton, Hebron.	Charles A. Breck, Bristol.
Allenstown, Bow, Epsom, Hooksett, Pembroke.	Henry S. Roberts, Suncook.
Alstead, Chesterfield, Walpole, Westmoreland.	William J. English, Walpole.
Alton, Farmington Special, New Durham, Tuftonboro, Wolfeboro.	Fred W. Landman, Wolfeboro.
Amherst, Brookline, Milford, Mont Vernon.	Harold C. Balce, Milford.
Andover, Danbury, Grafton, New London, Wilmot.	Idella K. Farnum, Andover.
Antrim, Deering, Hillsborough, Washington, Windsor.	Amasa A. Holden, Hillsboro.
Ashland, Dorchester, Holderness, Rumney.	Clarence M. Harris, Ashland.
Atkinson, Hampstead, Newton, Plaistow, Salem, South Hampton.	James A. MacDougall, Salem.
Auburn, Candia, Chester, Deerfield, Raymond.	Vincent Gatto Raymond.
Barnstead, Chichester, Gilmanton, Pittsfield.	Frederick T. Johnson, Pittsfield.
Barrington, Durham, Greenland, Lee, Madbury, Newmarket.	Vacant.
Bartlett, Chatham, Conway, Hart's Location, Jackson, Livermore.	Llewellyn M. Felch, North Conway.
Bath, Benton, Haverhill, Monroe.	Norman J. Page, Woodsville.
Bedford, Goffstown, New Boston.	Howard L. Winslow, Goffstown.
Belmont, Gilford, Northfield, Tilton.	Channing T. Sanborn, Tilton.
Bennington, Dublin, Greenfield, Hancock, Francestown, Peterborough.	Leon E. Prior, Peterboro.
Bethlehem, Littleton.	Vernon K. Brackett, Littleton.
Boscawen, Canterbury, Loudon, Penacook, Salisbury.	George W. Sumner, Penacook.
Bradford, Newbury, Sutton, Warner, Webster.	George H. Harmon, Warner.
NEW HAMPSHIRE—continued.	
Brentwood, Exeter, Kensington, Newfields, Stratham.	Clifton A. Towle, Exeter.
Brookfield, Middleton, Milton-Wakefield.	Fred W. Dudley, Union.
Campton, Ellsworth, Lincoln, Thornton, Woodstock.	Alonzo J. Knowlton, North Woodstock.
Canaan, Enfield, Orange, Springfield.	Edgar F. Callahan, Enfield.
Carroll, Dalton, Whitefield.	Wesley H. Douglass, Whitefield.
Center Harbor, Meredith, Moultonborough, New Hampton.	William H. Buker, Meredith.
Clarksville, Pittsburg, Stewartstown.	Earl P. Freese, West Stewartstown.
Colebrook, Columbia.	Arthur C. Irish, Colebrook.
Cornish, Corydon, Plainfield.	Andrew P. Averill, Cornish Flat.
Danville, East Kingston, Epping, Fremont, Kingston, Nottingham, Sandown.	Fred E. Pitkin, Epping.
Derry, Londonderry, Windham.	Charles W. Cutts, Derry.
Dummer, Errol, Milan, Wentworth's Location.	Walton S. Adams, Milan.
Dunbarton, Henniker, Hopkinton, Weare.	Fred S. Libbey, Henniker.
Easton, Franconia, Landaff, Lisbon, Lyman.	Geo. R. Gardiner, Lisbon.
Eaton, Effingham, Freedom, Ossipee.	Harold C. Wingate, Mountainview.
Farmington, Northwood, Strafford.	Clarence Sanborn, Northwood Center.
Fitzwilliam, Jaffrey, Rindge, Sharon, Troy.	Lewis S. Record, East Jaffrey
Franklin, Hill, Sanbornton.	George A. Keith, Franklin.
Gilsum, Harrisville, Marlborough, Nelson, Roxbury, Stoddard, Sullivan, Surry.	Vernon S. Ames, Marlboro.
Gorham, Randolph (Success), Shelburne.	Charles W. Walker, Gorham.
Goshen, Newport, Sunapee, Unity.	William H. S. Ellingwood, Newport.
Grantham, Lebanon.	H. Leslie Sawyer, Lebanon.
Greenville, Lyndeborough, Mason, New Ipswich, Temple, Wilton.	Ralph P. Currier, Wilton.

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III.—COUNTY AND OTHER LOCAL SUPERINTENDENTS OF SCHOOLS—Continued.

Towns in union.	Union superintendent.	Towns in union.	Union superintendent.
NEW HAMPSHIRE—continued.		NEW HAMPSHIRE—continued.	
Hampton, Hampton Falls, Newcastle, Newington, North Hampton, Rye, Seabrook.	Charles H. Walker, Hampton.	Hollis, Hudson, Litchfield, Merrimack, Pelham.	Louis D. Record, 16 Summer St., Nashua.
		Jefferson, Lancaster.	Eugene Tuttle, Lancaster.
		Northumberland, Stark, Stratford.	Orin M. Holman, North Stratford.
Hanover, Lyme...	Charles W. Cutts, Lebanon.	Orford, Piermont, Warren, Wentworth.	Carl T. Rhoades, Wentworth.
Hinsdale, Richmond, Swanzey, Winchester.	George O. Smith, Hinsdale.		
		Rollinsford, Somersworth.	Walter H. Young, Somersworth.

County.	County superintendent.	County.	County superintendent.
NEW JERSEY.		NEW MEXICO—continued.	
Atlantic	H. M. Cressman, Egg Harbor City.	Dona Ana	Mrs. Fleming Jones, Las Cruces.
Bergen	B. C. Wooster, Hackensack.	Eddy	Geo. M. Brinton, Carlsbad.
Burlington	L. J. Kaser, Mount Holly.	Grant	Mrs. Geo. Bisby, Silver City.
Camden	C. S. Albertson, Camden.	Guadalupe	Mrs. Adela G. Gallegos, Santa Rosa.
Cape May	Aaron W. Hand, Cape May Court House.	Harding	Mrs. Edith Coffeen, Roy.
Cumberland	J. J. Unger, Bridgeton.	Hidalgo	Inez Wright, Lordsburg.
Essex	Oliver J. Morelock, Newark.	Lea	L. O. Cunningham, Lovington.
Gloucester	D. T. Steelman, Woodbury.	Lincoln	Mrs. Mande L. Blaney, Carrizozo.
Hudson	A. H. Updyke, Jersey City.	Luna	Mrs. Joe Willis Bell, Deming.
Hunterdon	J. S. Hoffman, Flemington.	McKinley	H. W. Brose, Gallup.
Mercer	J. M. Arnold, Trenton.	Mora	Grace Ogden, Mora.
Middlesex	H. B. Willis, New Brunswick.	Otero	Mrs. A. E. Thomas, Alamogordo.
Monmouth	C. J. Strahan, Freehold.	Quay	Mrs. Nelle Hauser, Tucumcari.
Morris	J. H. Hulsart, Morristown.	Rio Arriba	Canuto Trujillo, Tierra Amarilla.
Ocean	C. A. Morris, Toms River.	Roosevelt	R. A. Palm, Portales.
Passaic	E. W. Garrison, Paterson.	Sandoval	Telesfor Sandoval, Bernalillo.
Salem	H. C. Dixon, Salem.	San Miguel	Benito F. Baca, Las Vegas.
Somerset	Henry C. Krebs, Somerville.	San Juan	Mrs. Ina Rathbun, Aztec.
Sussex	Ralph Decker, Newton.	Santa Fe	Mrs. Adelina Warren, Santa Fe.
Union	A. L. Johnson, Elizabeth.	Sierra	Mrs. Oliver B. Dawson, Hillsboro.
Warren	Robert G. Sanford, Belvidere.	Socorro	E. M. Chaves, Socorro.
NEW MEXICO.		Taos	Christoval J. Quintana, Taos.
Bernalillo	Irene Burke, Albuquerque.	Torrance	Mrs. A. M. Parrett, Estancia.
Catron	Miss Deatron Campbell, Reserve.	Union	Marie Myers, Clayton.
Chaves	C. C. Hill, Roswell.	Valencia	Saturnino Baca, Belen.
Colfax	Lily Heanigan, Raton.		
Curry	Mrs. Una M. Steed, Clovis.		
De Baca	B. H. Kirk, Fort Sumner.		

County.	District superintendent.	County.	District superintendent.
NEW YORK.		NEW YORK—continued.	
Albany	E. E. Richmond, Ravenna.		
	W. J. Haverly, West Berne.		
	Frank Stanbro, Menands.	Chautauqua	Merton E. Hubbard, South Dayton.
Allegany	Frank L. Tuthill, Fillmore.		
	John D. Jones, Cuba.		Anna S. Hilton, 433 East Fourth St., Jamestown.
	O. M. Burdick, Little Genesee.		
	W. H. Garwood, Canaseraga.		Mrs. D. B. Connelly, Ashville.
	Willet L. Ward, Wellsville.		J. G. Pratt, Sherman.
Broome	Harvey B. Heath, Ouaquaga.		L. Waldo Swain, Westfield.
	J. E. Hurlburt, Windsor.		J. S. Wright, Falconer.
	K. E. Beilby, Union.	Chemung	C. W. Vandegrift, Horseheads.
	Erwin B. Whitney, Whitney Point.		Harriet Esterbrook, Elmira.
Cattaraugus	Joel J. Crandall, Franklinville	Chenango	W. S. Herrick, South Otselic.
	Gilbert A. Farwell, Hinsdale.		Albert C. Bowers, New Berlin.
	C. S. Palmer, Salamanca.		J. S. Childs, Oxford.
	G. E. Waller, Little Valley.		Jane I Schenck, Greene.
	E. A. Stratton, Randolph.		Mary L. Isbell, Norwich.
Cayuga	H. S. R. Murphy, Cato.	Clinton	Oliver A. Wolcott, Keeseville.
	H. T. Morrison, Weedsport.		Ernest B. Sargeant, Ellenburg.
	Anna M. Kent, Union Springs.		Clara E. Soden, Mooers Forks.
	Fred V. Lester, Venice Center.		Katherine McMartin, Plattsburg, R. F. D. No. 1.
	Mabel C. L. Rodger, Moravia.		

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III.—County and Other Local Superintendent of Schools—Continued.

County.	District superintendent.
NEW YORK—con.	
Columbia	S. B. Smith, East Chatham.
	Charles Rivenburg, Germantown.
	M. G. Rickey, Ancram.
Cortland	W. K. Patrick, Cuyler.
	Ada M. Shuler, Solon.
	Edwin M. Preston, Dryden, R. F. D. 20.
Delaware	Charles F. Ferry, Masonville.
	Z. Le R. Myers, Downesville.
	E. O. Harkness, Delhi.
	Zena R. Travis, Roxbury.
	M. G. Nelson, Franklin.
	A. T. Hamilton, North Harpersfield.
Dutchess	Frank L. Haight, Fishkill.
	Clayton T. Sherman, Poughkeepsie.
	Maude S. Rundall, Amenia.
	F. O. Green, Tivoli.
Erie	C. A. Heist, Clarence.
	H. A. Dann, Lancaster.
	W. E. Pierce, East Aurora.
	E. D. Ormsby, North Collins.
	W. E. Bensley, Springville.
Essex	C. J. Mousaw, Schroon Lake.
	Gertrude M. Spear, Westport.
	Mattie J. Prime, Upper Jay.
Franklin	Myrtle E. MacDonald, Chateaugay.
	G. La Graff, Tupper Lake.
	F. H. Wilcox, North Bangor.
	Gertrude E. Hyde, Moira.
Fulton	Fred A. Stryker, Stratford.
	John Paris, Broadalbin.
Genesee	H. W. Dyer, East Pembroke.
	J. L. M. Uphill, 8 Fairmont Ave., Batavia.
Greene	Thos. C. Perry, Catskill.
	R. M. MacNaught, Windham.
	Walter J. Decker, Hunter.
Hamilton	C. B. Hanley, Wells.
Herkimer	A. J. Rose, West Winfield.
	Silas C. Kimm, Herkimer.
	G. H. Sabin, Salisbury.
	B. M. Robinson, Poland.
Jefferson	C. M. Pierce, Adams.
	W. J. Linnell, 309 Ten Eyck St., Watertown.
	T. B. Stoel, Clayton.
	H. W. Ciegler, Sacket Harbor.
	D. D. T. Marshall, Redwood.
	Mrs. G. L. de Olloqui, Carthage.
Lewis	G. A. Sealey, Harrisville.
	Grace H. Elliott, Lowville.
	Ruth M. Johnson, Port Leyden.
	A. W. Trainor, West Leyden.
Livingston	John P. Magee, Geneseo.
	G. C. McNinch, Conesus.
	R. G. Conklin, Tuscarora.
Madison	Irving S. Sears, Hamilton.
	A. I. Tyler, Cazenovia.
	E. A. Fuller, Morrisville.
	John B. Harris, Canastota.
Monroe	W. W. Rayfield, Webster.
	M. B. Furman, East Rochester.
	Fred W. Hill, Spencerport.
	John C. Malloch Churchville.
Montgomery	N. Berton Alter, Nelliston.
	George F. Bowman, 24 Blood Building, Amsterdam.
Nassau	James S. Cooley, Mineola.
	W. C. Mepham, Merrick.
Niagara	W. D. Wisner, Ransomville.
	Orrin A. Kold, Lockport, R. F. D. 5.
	M. Gazelle Hoffman, Lewiston,

County.	District superintendent.
NEW YORK—con.	
Oneida	Glenn G. Steele, 829 Rose Place, Utica.
	Harry C. Buck, Clayville.
	W. J. Lewis, Clinton.
	Neva S. Angell, Durhamville, R. F. D. No. 1.
	Stanton D. Austin, Barneveld.
	Pauline L. Scott, Blossvale.
Onondaga	Daniel M. Blue, Boonville.
	M. E. Hinman, Tully.
	G. T. Fuggle, Jamesville.
	Earl Asselstine, Lysander.
	Manford D. Green, Liverpool.
	Homes T. Case, Skaneateles.
Ontario	Leon J. Cook, East Bloomfield.
	H. S. G. Loveless, Phelps.
	E. G. Soper, Seneca Castle.
	Harrie P. Weatherlow, Naples,
Orange	Theron L. McKnight, Central Valley.
	O. Eichenberg, Monroe.
	S. A. Cortright, 6 Myrtle Ave. Ext., Middletown.
Orleans	Mary J. Franklin, 118 W. Center St., Medina.
	Olive Clement, Albion.
	Charles W. Smith, Holley.
Oswego	Mildred G. Pratt, Lacona.
	J. M. Bonner, Richland.
	Aura A. Cole, Constantia.
	Charles I. Kingsbury, Mexico.
	W. S. Gardner, Fulton.
Otsego	J. B. McManus, Cooperstown.
	Frederick W. Strong, Worcester.
	Grace A. Louden, Cooperstown.
	John E. Frederick, 13 Forest Ave., Oneonta.
	Harrison Cossaart, Morris.
	Floyd R. Thayer, Edmeston.
Putnam	James H. Brooks, Garrison.
Rensselaer	Mary Haswell, Hoosick Falls.
	Mrs. Adelaide W. Gardner, Stephentown.
	G. Everett Patrie, Castleton.
Rockland	George W. Miller, Nanuet.
St. Lawrence	W. T. Clark, Hailesboro.
	F. H. Wallace, Morristown.
	Carlos S. Blood, Heuvelton.
	V. C. Warriner, Lisbon.
	Rose M. Libby, Canton.
	Mrs. E. D. Grubb, Potsdam.
	E. F. McDonald, Massena.
	A. J. Fields, Winthrop.
Saratoga	A. A. Lavery, Round Lake.
	Lou Messinger, Ballston Spa.
	E. E. Hinman, Schuylerville.
	A. M. Hollister, Corinth.
Schenectady	Frank W. Palmer, Schenectady.
Schoharie	Orlando J. Ives, Jefferson.
	Marion W. Lewis, Schoharie.
	R. W. Eldredge, Sharon Springs.
Schuyler	Alberta Spaulding, Burdett.
	Caroline Van Liew, Watkins.
Seneca	W. S. Wilson, Ovid.
	Charles B. Earl, Waterloo.
Steuben	Frederick C. Wilcox, Addison.
	Winfred Morrow, Bath.
	Frank H. Smith, Addison.
	Charles A. Bruen, Jasper.
	H. M. Brush, Arkport.
	Guyon J. Carter, Avoca.
	J. G. McConnell, Prattsburg.

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III.—County and Other Local Superintendents of Schools—Continued.

County.	District superintendent.
NEW YORK—con.	
Suffolk	P. B. Matthews, Bridgehampton. Roscoe C. Craft, Port Jefferson. Leonard J. Smith, Northport.
Sullivan	F. J. Lewis, Barryville. Charles S. Hick, Jeffersonville. Mrs. Emma C. Chase, Monticello.
Tioga	A. E. Belden, Newark Valley. M. D. Goodrich, Tioga Center. Mrs. H. T. Whittemore, Owego.
Tompkins	Fred A. Beardsley, Trumansburg. J. Paul Munson, Groton. John D. Bigelow, Ithaca.
Ulster	Emily S. Burnett, Kingston, Station R. J. U. Gillette, Port Ewen. Elsie J. Roat, Ellenville.
Warren	W. J. Andrews, Oliverea. F. F. Gunn, Glens Falls. J. R. Stickney, Bolton Landing. Kathleen Osborn, North Creek.
NEW YORK—con.	
Washington	Marjorie G. Meiklejohn, Whitehall. Mrs. E. M. D. Cronkhite, Hudson Falls. Rose E. Gibbons, Hudson Falls. Mrs. Caroline P. Perry, Cambridge.
Wayne	Mrs. Helen C. Andrews, Lyons. Mrs. Ida E. Cosad, Wolcott. A. M. Croop, Newark. Lewis H. Clark, Sodus.
Westchester	S. J. Preston, White Plains. C. H. Cheney, White Plains. G. H. Covey, Katonah.
Wyoming	R. D. Knapp, Purdy Station. J. T. McGurren, Bliss. Harriet M. Patch, Cowlesville. G. H. Stratton, Castile.
Yates	J. F. Bullock, Penn Yan. E. P. Corbit, Rushville.

County.	County superintendent.
NORTH CAROLINA.	
Alamance	M. C. Terrell, Graham.
Alexander	C. H. Gryder, Hiddenite.
Alleghany	John M. Cheek, Sparta.
Anson	R. W. Allen, Wadesboro.
Ashe	C. M. Dickson, Silas Creek.
Avery	Frank A. Edmonson, Newland.
Beaufort	H. H. McLean, Washington.
Bertie	H. W. Early, Windsor.
Bladen	B. J. Cromartie, Garland.
Brunswick	M. C. Guthrie, Southport.
Buncombe	F. L. Wells, Asheville.
Burke	T. L. Sigmon, Morganton.
Cabarrus	J. B. Robertson, Concord.
Caldwell	Y. D. Moore, Lenoir.
Camden	L. L. Stevens, Indiantown.
Carteret	M. L. Wright, Beaufort.
Caswell	R. A. Pope, Yanceyville.
Catawba	George E. Long, Newton.
Chatham	W. R. Thompson, Pittsboro.
Cherokee	A. L. Martin, Murphy.
Chowan	R. H. Bachman, Edenton.
Clay	Allen J. Bell, Hayesville.
Cleveland	J. Y. Irvin, Shelby.
Columbus	Harry M. Bowling, Whiteville.
Craven	R. S. Proctor, Newbern.
Cumberland	B. T. McBryde, Fayetteville.
Currituck	W. D. Cox, Moyock.
Dare	Mabel Evans, Manteo.
Davidson	S. G. Hasty, Lexington.
Davie	F. P. Bradley, Mocksville.
Duplin	M. H. Wooten, Warsaw.
Durham	John W. Carr, jr., Durham.
Edgecombe	R. E. Sentelle, Tarboro.
Forsyth	W. B. Speas, Winston-Salem.
Franklin	E. L. Best, Louisburg.
Gaston	F. P. Hall, Belmont.
Gates	J. M. Glenn, Gatesville.
Graham	J. H. Moody, Robbinsville.
Granville	J. F. Webb, Oxford.
Greene	B. C. Williams, Snow Hill.
Guilford	Thos. R. Foust, Greensboro.
Halifax	A. E. Akers, Roanoke Rapids.
Harnett	B. P. Gentry, Lillington.
Haywood	A. C. Reynolds, Waynesville.
Henderson	R. G. Anders, Hendersonville.
Hertford	N. W. Brinton, Winton.
Hoke	W. P. Hawfield, Raeford.
Hyde	G. M. Guthrie, Swan Quarter.
Iredell	James A. Steele, Statesville.
Jackson	O. S. Dillard, Sylva.
Johnston	W. H. Hipps, Smithfield.
NORTH CAROLINA—contd.	
Jones	John R. Barker, Trenton.
Lee	....., Sanford.
Lenoir	E. E. Sams, Kinston.
Lincoln	L. B. Beam, Lincolnton.
McDowell	N. F. Steppe, Marion.
Macon	M. D. Billings, Franklin.
Madison	F. M. Jones, Marshall.
Martin	A. J. Manning, Williamston.
Mecklenberg	J. M. Matthews, Charlotte.
Mitchell	Jason Deyton, Bakersville.
Montgomery	J. S. Edwards, Troy.
Moore	A. B. Cameron, Carthage.
Nash	L. S. Inscoe, Nashville.
New Hanover	W. A. Graham, Wilmington.
Northampton	P. J. Long, Jackson.
Onslow	W. M. Thompson, Jacksonville.
Orange	R. H. Claytor, Hillsboro.
Pamlico	T. B. Attmore, Stonewall.
Pasquotank	M. P. Jennings, Elizabeth City.
Pender	T. T. Murphy, Burgaw.
Perquimans	Charles Whedbee, Hertford.
Person	J. A. Beam, Roxboro.
Pitt	R. G. Fitzgerald, Greenville.
Polk	E. W. S. Cobb, Columbus.
Randolph	T. F. Bulla, Ashboro.
Richmond	L. J. Bell, Rockingham.
Robeson	J. R. Poole, Lumberton.
Rockingham	L. N. Hickerson, Reidsville.
Rowan	R. G. Kizer, Salisbury.
Rutherford	W. R. Hill, Rutherfordton.
Sampson	J. L. Hathcock, Clinton.
Scotland	L. M. Peele, Laurinburg.
Stanley	Charles A. Reap, Albemarle.
Stokes	J. C. Carson, Germanton.
Surry	J. H. Allen, Elkin.
Swain	N. E. Wright, Bryson City.
Transylvania	A. F. Mitchell, Penrose.
Tyrrell	W. F. Waters, Columbia.
Union	Ray Funderburk, Monroe.
Vance	E. M. Rollins, Henderson.
Wake	J. C. Lockhart, Raleigh.
Warren	J. Edward Allen, Warrenton.
Washington	John W. Darden, Plymouth.
Watauga	Smith Hagaman, Vilas.
Wayne	A. M. Proctor, Goldsboro.
Wilkes	C. C. Wright, Hunting Creek.
Wilson	C. L. Coon, Wilson.
Yadkin	J. T. Reece, Yadkinville.
Yancey	W. O. Griffith, Windom.

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III.—County and Other Local Superintendents of Schools—Continued.

County.	County superintendents.
NORTH DAKOTA.	
Adams	Rose C. Wagner, Hettinger.
Barnes	Jodn A. Johnson, Valley City.
Benton	Adeline Englehorn, Minnewaukan.
Billings	Mabel I. Rapp, Medora.
Bottineau	Annie D. Burr, Bottineau.
Bowman	Madge L. Rugg, Bowman.
Burke	Mary Stannard, Bowbells.
Burleigh	W. E. Parsons, Bismarck.
Cass	Helen H. Porter, Fargo.
Cavalier	S. J. A. Boyd, Langdon.
Dickey	Faith Stevens, Ellendale.
Divide	J. H. Phelps, Crosby.
Dunn	Murle L. Hill, Manning.
Eddy	Jesse D. Neff, New Rockford.
Emmons	Henry H. Hanson, Linton.
Foster	Mary K. Beaty, Carrington.
Golden Valley	John W. Westland, Beach.
Grand Forks	M. Beatrice Johnstone, Grand Forks.
Grant	Mina H. Aasved, Carson.
Griggs	Mathilda Johnson, Cooperstown.
Hettinger	Shirley, G. Fox, Mott.
Kidder	Christina Scott, Steele.
Lamoure	Mabel Osborne, Lamoure.
Logan	Sol. R. Eilert, Napoleon.
McHenry	Erma Smith, Towner.
McIntosh	Geo. A. Boschma, Ashley.
McKenzie	Edwina Knecht, Schafer.
McLean	M. E. McCurdy, Washburn.
Mercer	E. D. Goodwin, Stanton.
Morton	H. K. Jensen, Mandan.
Mountrail	S. B. Eidsmoe, Stanley.
Nelson	Jennie E. Skrivseth, Lakota.
Oliver	E. F. Mutchler, Center.
Pembina	Charlotte A. Jones, Cavalier.
Pierce	Sara C. Guss, Rugby.
Ramsey	John A. Haig, Devils Lake.
Ransom	Anne Rutherford, Lisbon.
Renville	E. L. Kingsley, Mohall.
Richland	Ethel K. Mertz, Wahpeton.
Rolette	Luella Marcotte, Rolla.
Sargent	Flora E. Baker, Forman.
Sheridan	J. N. Muehl, McClusky.
Sioux	L. W. Colebank, Swastika.
Slope	Gertrude F. Hablutzel, Amidon.
Stark	H. O. Pippen, Dickinson.
Steele	Aagot Raaen, Finley.
Stutsman	Harriet E. Perry, Jamestown.
Towner	Gertrude Gibbens, Cando.
Traill	Anna G. Nestoss, Hillsboro.
Walsh	W. J. Hoover, Grafton.
Ward	A. M. Waller, Minot.
Wells	Senney Nertrost, Fessenden.
Williams	George Hillier, Williston.
OHIO.	
Adams	M. D. Shoemaker, West Union.
Allen	C. A. Arganbright, Lima.
Ashland	G. W. Finch, Ashland.
Ashtabula	C. D. Groves, Jefferson.
Athens	Guy Dinsmoor, Athens.
Auglaize	Glen Drummond, Wapakoneta.
Belmont	Geo. M. Pogue, St. Clairsville.
Brown	E. V. Stephan, Georgetown.
Butler	John Schwarz, Hamilton.
Carroll	G. E. Bell, Carrollton.
Champaign	J. C. Neer, Urbana.
Clark	J. M. Collins, Springfield.
Clermont	B. T. Davis, Batavia.
Clinton	H. W. Hodson, Wilmington.
Columbiana	John W. Moore, Lisbon.

County.	County Superintendent.
OHIO—continued.	
Coshocton	L. C. Shaw, Coshocton.
Crawford	F. G. Bittikofer, Bucyrus.
Cuyahoga	A. G. Yawberg, Cleveland.
Darke	C. A. Wilt, Greenville.
Defiance	W. W. Heater, Defiance.
Delaware	Paul M. Lybarger, Delaware.
Erie	I. S. Winner, Sandusky.
Fairfield	C. G. Johnson, Lancaster.
Fayette	O. S. Nelson, Washington Court House.
Franklin	Charles W. Cookson, Columbus.
Fulton	C. D. Perry, Wauseon.
Gallia	E. W. Edwards, Gallipolis.
Geauga	Harold Ryder, Chardon.
Greene	H. C. Aultman, Xenia.
Guernsey	W. G. Wolfe, Cambridge.
Hamilton	Pliny A. Johnston, Cincinnati.
Hancock	A. J. Nowlan, Findlay.
Hardin	F. P. Allyn, Kenton.
Harrison	G. E. Roche, Cadiz.
Henry	H. D. Teal, Napoleon.
Highland	W. H. Vance, Hillsboro.
Hocking	W. C. Brashares, Logan.
Holmes	F. H. Close, Millersburg.
Huron	E. A. Bell, Norwalk.
Jackson	J. F. Dixon, Jackson.
Jefferson	W. I. Everson, Steubenville.
Knox	J. C. Marriott, Mount Vernon.
Lake	F. H. Kendall, Painesville.
Lawrence	C. B. Dillon, Ironton.
Licking	N. D. O. Wilson, Newark.
Logan	D. H. Sellars, Bellefontaine.
Lorain	E. C. Seale, Elyria.
Lucas	J. W. Whitmer, Toledo.
Madison	L. C. Dick, London.
Mahoning	Jerome Hull, Youngstown.
Marion	W. R. Heistand, Marion.
Medina	C. B. Ulery, Medina.
Meigs	T. W. Karr, Pomeroy.
Mercer	S. Cotterman, Celina.
Miami	L. J. Bennett, Troy.
Monroe	E. C. Felock, Woodsfield.
Montgomery	A. A. Maysilles, Dayton.
Morgan	F. A. Davis, McConnelsville.
Morrow	C. G. Leiter, Mount Gilead.
Muskingum	John S. McGinnis, Zanesville.
Noble	H. L. Bates, Caldwell.
Ottawa	A. O. Dehn, Port Clinton.
Paulding	John C. Berg, Paulding.
Perry	D. E. Riggle, New Lexington.
Pickaway	M. C. Warren, Circleville.
Pike	O. F. Williamson, Waverly.
Portage	O. E. Pore, Ravenna.
Preble	W. S. Fogarty, Eaton.
Putnam	G. J. Keinath, Ottawa.
Richland	L. C. Martin, Mansfield.
Ross	J. L. Fortney, Chillicothe.
Sandusky	S. A. Harbourt, Fremont.
Scioto	Edw. McCowen, Portsmouth.
Seneca	J. E. Sherck, Tiffin.
Shelby	W. E. Partington, Sidney.
Stark	J. A. Smith, Canton.
Summit	C. A. Flickinger, Akron.
Trumbull	J. E. Boetticher, Warren.
Tuscarawas	Chas. Barthelmeh, New Philadelphia.
Union	J. A. Yeasley, Marysville.
Van Wert	J. A. Greulach, Van Wert.
Vinton	C. L. Williams, McArthur.
Warren	F. B. Harris, Lebanon.
Washington	M. C. Smith, Marietta.
Wayne	G. U. Baumgardner, Wooster.
Williams	W. A. Salter, Bryan.
Wood	H. E. Hall, Bowling Green.
Wyandot	James H. Grove, Upper Sandusky.

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III.—County and Other Local Superintendents of Schools—Continued.

County.	County superintendent.
OKLAHOMA.	
Adair	Laura E. Mount, Stilwell.
Alfalfa	Charles C. Wolfe, Cherokee.
Atoka	C. M. Conwill, Atoka.
Beaver	W. L. Henson, Beaver.
Beckham	Anna Dudley, Sayre.
Blaine	Mrs. Kitty Hagan, Watonga.
Bryan	J. Lee Cunningham, Durant.
Caddo	D. M. Scism, Anadarko.
Canadian	Mrs. Edith M. Layton, El Reno.
Carter	Mrs. Kate Zaneis, Ardmore.
Cherokee	Minnie Benge, Tahlequah.
Choctaw	J. T. Reed, Hugo.
Cimarron	George W. Gillis, Boise City.
Cleveland	Maud Northcutt, Norman.
Coal	J. M. Cusenberry, Coalgate.
Comanche	Hazel Johnson, Lawton.
Cotton	M. M. Shepherd, Walter.
Craig	Mrs. Harry Wammack, Vinita.
Creek	Mrs. Frank Peters, Sapulpa.
Custer	Elizabeth Renick, Arapaho.
Delaware	Mrs. C. V. Aderhold, Jay.
Dewey	J. B. Conrad, Taloga.
Ellis	Arthur D. Walker, Arnett.
Garfield	J. C. Hoffsommer, Enid.
Garvin	Roxie Hughes, Pauls Valley.
Grady	H. F. Allen, Chickasha.
Grant	Hazel Hintz, Medford.
Greer	Will C. Jones, Mangum.
Harmon	Harry C. Hicks, Hollis.
Harper	W. D. Drake, Buffalo.
Haskell	E. F. Bates, Stigler.
Hughes	V. H. Durham, Holdenville.
Jackson	H. H. Porter, Altus.
Jefferson	R. C. White, Waurika.
Johnston	Oscar Darter, Tishomingo.
Kay	W. B. Clift, Newkirk.
Kingfisher	Mrs. Sara Liston, Kingfisher.
Kiowa	Mrs. Estella Alexander, Hobart.
Latimer	Florence G. Miller, Wilburton.
Le Flore	Miss De Grace Thomas, Poteau.
Lincoln	Mrs. Anna Willis, Chandler.
Logan	Mrs. Nora B. Muxlow, Guthrie.
Love	Shawnee Brown, Marietta.
McClain	Myrtle Stephens, Purcell.
McCurtain	M. R. Phillips, Idabell.
McIntosh	Ed Davis, Eufaula.
Major	Louisa Specht, Fairview.
Marshall	Mrs. J. L. Derrick, Madill.
Mayes	Carlotta Archer, Pryor.
Murray	Tom McGiboney, Sulphur.
Muskogee	H. P. Battles, Muskogee.
Noble	Mrs. A. E. Hitsman, Perry.
Nowata	E. R. Bell, Nowata.
Okfuskee	Geo. F. Durham, Okemah.
Oklahoma	Mrs. Ida M. Hale, Oklahoma.
Okmulgee	N. O. Hopkins, Okmulgee.
Osage	Ella Melone, Pawhuska.
Ottawa	Harry C. Ballinger, Miami.
Pawnee	May Hussey, Pawnee.
Payne	Emma Bassler, Stillwater.
Pittsburg	Fannie C. Ross, McAlester.
Pontotoc	A. Floyd, Ada.
Pottawatomie	Mrs. Margaret A. Chaney, Tecumseh.
Pushmataha	O. T. Hammond, Antlers.
Roger Mills	W. F. Brewer, Cheyenne.
Rogers	Callie Eaton, Claremore.
Seminole	W. A. Ingle, Wewoka.
Sequoyah	R. C. Mills, Sallisaw.
Stephens	C. J. Swofford, Duncan.
Texas	W. A. Martin, Guymon.
Tillman	Clay Kerr, Frederick.
Tulsa	Mrs. Minette Hedges, Tulsa.
Wagoner	Victoria Lyles, Wagoner.
Washington	Mary Richards, Bartlesville.
Washita	S. G. Thomas, Cordell.
Woods	Mrs. Edna E. Fash, Alva.
Woodward	L. B. Chandler, Woodward.

County.	County superintendent.
OREGON.	
Baker	Mrs. Gertrude Parker, Baker.
Benton	E. H. Castle, Corvallis.
Clackamas	Brenton Veddar, Oregon City.
Clatsop	O. H. Byland, Astoria.
Columbia	J. B. Wilkerson, St. Helens.
Coos	C. E. Mulkey, Coquille.
Crook	J. E. Myers, Prineville.
Curry	Mrs. Jennie M. Cope, Gold Beach.
Deschutes	J. Alton Thompson, Bend.
Douglas	O. C. Brown, Roseburg.
Gilliam	Mrs. Jean K. Porter, Condon.
Grant	Gertrude Lyon, Canyon City.
Harney	Mrs. Mary Griffin, Burns.
Hood River	L. B. Gibson, Hood River.
Jackson	Susanne W. Homes, Jacksonville.
Jefferson	Mrs. Lillian Watts, Madras.
Josephine	Mrs. Alice M. Bacon, Grants Pass.
Klamath	Miss Twyla Head, Klamath Falls.
Lake	Pearl Hall, Lakeview.
Lane	E. J. Moore, Eugene.
Lincoln	R. P. Goin, Toledo.
Linn	Mrs. E. S. Geer, Albany.
Malheur	Mrs. E. M. Crail, Vale.
Marion	Mrs. M. L. Fulkerson, Salem.
Morrow	Mrs. Lena S. Shurte, Heppner.
Multnomah	W. C. Alderson, Portland.
Polk	Josiah Wills, Dallas.
Sherman	Mrs. Grace L. Zevely, Moro.
Tillamook	G. B. Lamb, Tillamook.
Umatilla	W. W. Green, Pendleton.
Union	Mrs. A. E. Ivanhoe, La Grande.
Wallowa	J. C. Conley, Enterprise.
Wasco	A. E. Gronewald, The Dalles.
Washington	N. A. Frost, Hillsboro.
Wheeler	H. J. Simmons, Fossil.
Yamhill	S. S. Duncan, McMinnville.
PENNSYLVANIA.	
Adams	H. Milton Roth, Gettysburg.
Allegheny	Saml. Hamilton, Wilkinsburg
Armstrong	C. M. Heilman, Kittanning.
Beaver	David C. Locke, Beaver.
Bedford	Lloyd H. Hinkle, Bedford.
Berks	E. M. Rapp, Reading.
Blair	T. S. Davis, Altoona.
Bradford	Wm. T. Clarke, Towanda.
Bucks	J. H. Hoffman, Doylestown.
Butler	J. T. Connell, Butler.
Cambria	M. S. Bents, Ebensburg.
Cameron	C. E. Plasterer, Emporium.
Carbon	J. J. Bevan, Mauch Chunk.
Center	D. O. Etters, State College.
Chester	Clyde T. Saylor, Westchester.
Clarion	N. E. Heeter, Clarion.
Clearfield	W. P. Trostle, Clearfield.
Clinton	I. N. McCloskey, Lock Haven.
Columbia	Wm. W. Evans, Bloomsburg.
Crawford	P. D. Blair, Meadville.
Cumberland	J. Kelso Green, Carlisle.
Dauphin	Frank E. Shambaugh, Lykens.
Delaware	A. G. C. Smith, Media.
Elk	J. W. Sweeney, St. Marys.
Erie	I. H. Russell, North East.
Fayette	John S. Carroll, Uniontown.
Forest	J. O. Carson, Tionesta.
Franklin	L. E. Smith, Chambersburg.
Fulton	J. E. Thomas, McConnellsburg.
Greene	H. D. Freeland, Waynesburg.
Huntingdon	L. E. Boyer, Huntingdon.
Indiana	J. F. Chapman, Indiana.
Jefferson	C. A. Anderson, Brookville.
Juniata	C. E. Kauffman, McAlisterville.

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III.—County and Other Local Superintendents of Schools—Continued.

County.	County superintendent.	County.	County superintendent.
PENNSYLVANIA—continued.		PENNSYLVANIA—continued.	
Lackawanna	J. C. Taylor, Scranton.	Potter	A. P. Akeley, Coudersport.
Lancaster	Daniel Fleisher, Lancaster.	Schuylkill	L. Seltzer, Pottsville.
Lawrence	C. F. Ball, Mahoningtown, R. 8.	Snyder	T. A. Stetler, Middleburg.
Lebanon	John W. Snoke, Lebanon.	Somerset	John H. Fike, Somerset.
Lehigh	Mervin J. Wertman, Orefield.	Sullivan	Harry R. Henning, Lopez.
Luzerne	F. P. Hopper, Wilkes-Barre.	Susquehanna	F. H. Taylor, Montrose.
Lycoming	G. B. Milnor, Williamsport.	Tioga	Morton F. Jones, Blossburg.
McKean	C. W. Lillibridge, Smethport.	Union	Wm. W. Spigelmyer, Mifflinburg.
Mercer	H. E. McConnell, Mercer.	Venango	D. W. Armstrong, Franklin.
Mifflin	Lawrence Ruble, McVeytown.	Warren	C. S. Knapp, Warren.
Monroe	Frank Koehler, Stroudsburg.	Washington	L. R. Crumrine, Washington.
Montgomery	J. H. Landis, Norristown.	Wayne	A. H. Howell, Honesdale.
Montour	Fred W. Diehl, Danville.	Westmoreland	Robt. C. Shaw, Greensburg.
Northampton	Geo. A. Grim, Nazareth.	Wyoming	J. E. Morgan, Tunkhannock.
Northumberland	I. H. Mauser, Sunbury.	York	C. W. Stine, York.
Perry	D. A. Kline, New Bloomfield.		
Pike	L. Westbrook, Matamoras.		

Division.	Division superintendent.	Division.	Division superintendent.
PHILIPPINE ISLANDS.		PHILIPPINE ISLANDS—contd.	
Abra	Frank L. Meinke,[1] Bangued.	*Department of Mindanao and Sulu*—Continued.	
Albay	Ralph F. Rawson,[1] Albay.	Cotabato	Arthur E. Harpst, Cotabato.
Antique	Doroteo de Leon,[1] San Jose.	Davao	Vernon D. Gibson,[1] Davao.
Bataan	Benito Pangilinan, Balanga.	Lanao	Ralph E. Spencer, Camp Keithley.
Batangas	Quirino San Buenaventura,[1] Batangas.	Sulu	Jesse W. Light, Jolo.
Bohol	Frederic J. Waters, Tagbilaran.	Zamboanga	——, Zamboanga.
Bulacan	Wiley B. Beard, Malolos.	PORTO RICO.	
Cagayan	Sylvester C. Kelleher,[1] Tuguegarao.	Adjuntas	Luis Padilla.
Camarines	Carl B. Crabtree,[1] Naga.	Aguadilla	Santiago Veve, jr.
Capiz	Robert Clauson, Capiz.	Anasco	Pedro P. Arán.
Cavite	J. Scott McCormick,[1] Cavite.	Arecibo	Manuel G. Nin.
Cebu	Samuel J. Wright, Cebu.	Arroyo	Claude S. Field.
Ilocos Norte	Luther Parker,[1] Laoag.	Barros	Gumersindo Cordero.
Ilocos Sur	Daniel E. Clancy,[1] Vigan.	Bayamon	Manuel Negron Collazo.
Iloilo	O. H. Charles, Iloilo.	Cabo Rojo	William E. Littlefield.
Isabela	John H. M. Butler,[1] Ilagan.	Caguas	Gerardo Selles.
Laguna	Roderick G. McLeod, Santa Cruz.	Camuy	Juliet A. Casey.
Leyte	John F. Brown,[1] Tacloban.	Carolina	Rafael de J. Cordero.
Manila	H. A. Bordner, Manila.	Cayey	Alan H. Linch.
Marinduque	Clayton I. Halsey,[1] Boac.	Ciales	Julio B. Ortiz.
Mindoro	Justo Ramos, Calapan.	Coamo	Facundo Sánchez.
Misamis	James M. Swartz,[1] Cagayan.	Comerio	Oscar Borrata.
Mountain	Charles A. Blue,[1] Baguio.	Corozal	Francisco Gaztambide.
Mueva Ecija	Lewis P. Willis,[1] Cabanatuan.	Fajardo	S. D. W. Mills.
Nueva Vizcaya	Roy D. Bennett, Bayombong.	Guayama	Servando Rabainne.
Occidental Negros	William R. Hamme,[1] Bacolod.	Guayanilla	Hatuey Diaz.
Oriental Negros	John C. Early, Dumaguete.	Humacao	Cecilio Torres Reyes.
Palawan	Cenon Monasterial,[1] Cuyo.	Isabela	Carlos Rivera Ufret.
Pampanga	Adam C. Derkum, San Fernando.	Juana Diaz	Zoilo Gracia.
Pangasinan	Edward J. Murphy, Lingayen.	Juncos	Celestino Benitez.
Rizal	Charles W. Rummell, Pasig.	Lares	Chas. P. Cassidy.
Romblon	Salustiano Vibar,[1] Romblon.	Manati	Daniel F. Lynch.
Samar	Charles E. Hoye, Catbalogan.	Maricao	Francisco Garcia.
Sorsogon	George W. Satterthwaite, Sorsogon.	Mayaguez	Luis Irizarry.
Surigao	John H. McBride, jr.,[1] Surigao.	Naguabo	Valeriano Flores.
Tarlac	Arthur G. Spiller, Tarlac.	Ponce	John P. Blanco.
Tayabas	Gilbert S. Perez, Lucena.	Rio Grande	Rafael Segarra.
Union	Gabriel R. Manalac,[1] San Fernando.	Rio Piedras	Cecil E. Stevens.
Zambales	Francisco Llamado,[1] Iba.	Salinas	Stella Márquez.
Department of Mindanao and Sulu.		San German	J. U. McGuire.
Agusan	Frank P. Low, Butuan.	San Sebastian	Pedro A. Cebollero.
Bukidnon	Bertram S. Ten Hagen,[1] Malaybalay.	Toa Baja	José Vázquez.
		Utuado	Jose C. Rosario.
		Vega Baja	Victor M. Suarez.
		Yabucoa	Bernardo Huyke.
		Yauco	Charles E. Miner.

[1] Acting.

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III.—County and Other Local Superintendents of Schools—Continued.

Town.	Town superintendent.
RHODE ISLAND.	
Charlestown	Harold T. Lowe, Hope Valley.
Hopkinton	
Exeter	Rowland B. Palmer, Slocum.
Foster	E. P. Colson, North Scituate.
Glocester	Clovis H. Mitchell, Greenville.
Jamestown	Walter H. Tabor, Jamestown.
Little Compton	J. Webster Coombs, Little Compton.
RHODE ISLAND—continued.	
Middletown	Joel Peckham, Aquidneck.
Narragansett	William A. Brady, Wakefield.
New Shoreham	Richard Campbell, Block Island.
Richmond	Irving C. Phillips, East Greenwich.
West Greenwich	Joseph Rose, Escoheag.

County.	County superintendent.
SOUTH CAROLINA.	
Abbeville	P. H. Mann, Abbeville.
Aiken	C. H. Seigler, Aiken.
Allendale	J. R. Cullom, Allendale.
Anderson	L. M. Mahaffey, Anderson.
Bamberg	W. D. Rowell, Bamberg.
Barnwell	H. J. Crouch, Barnwell.
Beaufort	W. M. Steinmeyer, Beaufort.
Berkeley	Sidney Sanders, Moncks Corner.
Calhoun	G. W. Wannamaker, Matthews.
Charleston	H. H. McCarley, Charleston.
Cherokee	W. C. McArthur, Gaffney.
Chester	W. D. Knox, Chester.
Chesterfield	W. F. Young, Chesterfield.
Clarendon	E. J. Browne, Manning.
Colleton	H. S. Strickland, Walterboro.
Darlington	L. W. Dick, Darlington.
Dillon	H. M. Moody, Dillon.
Dorchester	J. A. Parler, St. George.
Edgefield	W. W. Fuller, Edgefield.
Fairfield	J. L. Brice, Winnsboro.
Florence	A. H. Gasque, Florence.
Georgetown	J. W. Doar, Georgetown.
Greenville	M. C. Barton, Greenville.
Greenwood	T. E. Dorn, Greenwood.
Hampton	W. P. Bowers, Hampton.
Horry	E. C. Allen, Conway.
Jasper	R. R. Tison, Ridgeland.
Kershaw	Allen Murchison, Camden.
Lancaster	A. C. Rowell, Lancaster.
Laurens	R. T. Wilson, Laurens.
Lee	B. T. Browne, Bishopville.
Lexington	Julius E. Sharpe, Lexington.
McCormick	T. J. Price, McCormick.
Marion	S. J. Wall, Marion.
Marlboro	A. L. Easterling, Bennettsville.
Newberry	E. H. Aull, Newberry.
Oconee	L. C. Spears, Walhalla.
Orangeburg	W. A. Schiffley, Orangeburg.
Pickens	F. V. Clayton, Pickens.
Richland	G. M. Eleazer, Columbia.
Saluda	F. O. Black, Saluda.
Spartanburg	J. B. Lancaster, Spartanburg.
Sumter	J. H. Haynesworth, Sumter.
Union	F. M. Ellerbe, Union.
Williamsburg	W. F. Montgomery, Kingstree.
York	J. E. Carroll, York.
SOUTH DAKOTA.	
Aurora	Elsie Hooper, Plankinton.
Beadle	Nellie Brusso, Huron.
Bennett	Clara Parlasca, Martin.
Bon Homme	Lillian S. Cooper, Tyndall.
Brookings	Mabel K. Trooien, Brookings.
Brown	Lucile J. Trott, Aberdeen.
Brule	Bonnie Martin, Chamberlain.
Buffalo	Clara Stroud, Gannvalley.
Butte	Mary Jamison, Belle Fourche.
Campbell	Leo Hanna, Mound City.
Charles Mix	Cora E. Stone, Lake Andes.
SOUTH DAKOTA—continued.	
Clark	Constance Conner, Clark.
Clay	Nora Silkenson, Vermillion.
Codington	Adah E. Minard, Watertown.
Corson	Regina Getman, McIntosh.
Custer	Anna Gillette, Custer.
Davison	Alma T. Leighty, Mitchell.
Day	Clara N. Hanson, Webster.
Deuel	C. G. St. John, Clear Lake.
Dewey	Eleanor McVey, Timber Lake
Douglas	Adelia D. Hilton, Armour.
Edmunds	Nellie J. Bapp, Ipswich.
Fall River	Irene E. Ferguson, Hot Springs.
Faulk	Marjory Warner, Faulkton.
Grant	Nettie S. Johnson, Milbank.
Gregory	Mary E. Ward, Burke.
Haakon	Nina Duryea, Philip.
Hamlin	Esther M. Shaver, Hayti.
Hand	Addie C. Welch, Miller.
Hanson	Jessie Robertson, Alexandria.
Harding	Eudora V. Stegner, Buffalo.
Hughes	Grace E. Matteson, Pierre.
Hutchinson	Caroline M. Waltner, Freeman.
Hyde	Henrietta DeWitte, Highmore.
Jackson	Blanch Fry, Kadoka.
Jerauld	R. H. Crerar, Wessington Springs.
Jones	Lucia E. O'Neil, Murdo.
Kingsbury	Margaret L. McCarty, De Smet.
Lake	Florence Northorp, Madison.
Lawrence	Kathryn Ayer-Ewing, Deadwood.
Lincoln	Maylou M. Rogers, Canton.
Lyman	W. C. Gigg, Oacoma.
McCook	Maude Graves, Salem.
McPherson	Ruth Reue, Leola.
Marshall	Catherine Morris, Britton.
Meade	Marion Johnson, Sturgis.
Mellette	Mayme Miller, White River.
Miner	Margaret Anderson, Howard.
Minnehaha	Alma Langhout, Sioux Falls.
Moody	Katharina Blilie, Flandreau.
Pennington	Irene E. Winkler, Rapid City.
Perkins	Mrs. Jessie O. Allen, Bison.
Potter	Frances Carper, Gettysburg.
Roberts	Pearl F. Robinson, Sisseton.
Sanborn	Sada C. Post, Woonsocket.
Shannon[1]	J. M. Blish, Pine Ridge.
Spink	Edna M. Cranefield, Redfield.
Stanley	Winifred Angel, Fort Pierre.
Sully	Fern Spencer, Onida.
Todd[1]	Mrs. Saide W. Hickey, Sioux Falls.
Tripp	Maude Henderson, Winner.
Turner	Robert Fawell, Parker.
Union	Clara J. Hayes, Elk Point.
Walworth	E. C. Giffin, Selby.
Washabaugh[1]	J. M. Woods, Wanblee.
Yankton	Mabel Holtan, Yankton.
Ziebach	Hortense M. Bagley, Dupree.

[1] Unorganized county.

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III.—County and Other Local Superintendents of Schools—Continued.

County.	County superintendent.
TENNESSEE.	
Anderson	W. H. Miller, Clinton.
Bedford	Louis Wilhoite, Shelbyville.
Benton	E. J. Clement, Camden.
Bledsoe	Samuel Hixson, Pikeville.
Blount	J. H. Miser, Maryville.
Bradley	E. J. Frazier, Cleveland.
Campbell	E. H. Smith, Jacksboro.
Cannon	W. H. Finley, Woodbury.
Carroll	D. T. Barnhill, Huntingdon.
Carter	J. R. Ritchie, Elizabethton.
Cheatham	P. H. Duke, Ashland City.
Chester	J. W. Stewart, Henderson.
Claiborne	Jas. W. Baldwin, New Tazewell.
Clay	H. G. Maxey, Celina.
Cocke	Ruth O'Dell, Newport.
Coffee	L. E. Summers, Manchester.
Crockett	W. B. Jones, Alamo.
Cumberland	J. S. Cline, Crossville.
Davidson	W. C. Dodson, Nashville.
Decatur	Geo. L. Wortham, Parsons.
DeKalb	Emmons Givan, Liberty.
Dickson	R. E. Corlew, Charlotte.
Dyer	N. Dora Bowen, Dyersburg.
Fayette	J. B. Summers, Somerville.
Fentress	W. R. Storie, Jamestown.
Franklin	W. J. Arnold, Winchester.
Gibson	F. L. Browning, Trenton.
Giles	B. H. Gaultney, Pulaski.
Grainger	H. G. Farmer, Rutledge.
Greene	Joel N. Pierce, Greeneville.
Grundy	J. L. Rollings, Altamont.
Hamblen	J. D. Self, Morristown.
Hamilton	J. A. Roberts, Chattanooga.
Hancock	L. J. Catron, Sneedville.
Hardeman	M. L. Hardin, Bolivar.
Hardin	J. C. Smith, Saltillo.
Hawkins	C. H. Richardson, Rogersville.
Haywood	F. R. Ogilvie, Brownsville.
Henderson	R. E. Powers, Lexington.
Henry	Joe Routon, Paris.
Hickman	J. A. McCord, Centerville.
Houston	D. J. McAulay, Erin.
Humphreys	W. H. Knight, Waverly.
Jackson	Estelle Galbreath, Gainesboro.
Jefferson	Roy R. Bales, Dandridge.
Johnson	R. P. Donnelly, Mountain City.
Knox	W. L. Stooksbury, Knoxville.
Lake	Thurman McCain, Tiptonville.
Lauderdale	G. G. McLeod, Ripley.
Lawrence	Virgil G. Holt, Lawrenceburg.
Lewis	S. Houston Proffitt, Hohenwald.
Lincoln	W. B. Davidson, Fayetteville.
Loudon	J. T. Henderson, Loudon.
McMinn	E. R. Lingerfelt, Athens.
McNairy	Terry Abernathy, Selmer.
Macon	W. H. Cook, La Fayette.
Madison	W. A. Malone, Jackson.
Marion	D. A. Tate, South Pittsburg.
Marshall	J. G. Stinson, Lewisburg.
Maury	Jno. P. Graham, Culleoka.
Meigs	J. H. Bennett, Decatur.
Monroe	H. L. Callahan, Madisonville.
Montgomery	A. W. Jobe, Clarksville.
Moore	L. H. Wiseman, Lynchburg.
Morgan	A. B. Peters, Wartburg.
Obion	B. A. Vaughan, Union City.
Overton	George O. Lea, Livingston.
Perry	L. G. Bunch, Linden.
Pickett	W. J. Babb, Byrdstown.
Polk	W. B. Rucker, Copperhill.
Putnam	Beecher Gentry, Cookeville.
Rhea	Walter White, Dayton.
Roane	J. F. Brittain, Kingston.
Robertson	Wm. McNeeley, Springfield.
Rutherford	W. N. Elrod, Murfreesboro.
Scott	W. J. Jeffers, Huntsville.
Sequatchie	W. V. Fridley, Dunlap.
Sevier	R. L. Ogle, Sevierville.
Shelby	Charl O. Williams, Memphis.
Smith	E. S. Huffines, Carthage.
Stewart	W. C. Howell, Dover.
Sullivan	J. C. Akard, Blountville.
Sumner	T. W. Hunter, Gallatin.
Tipton	Eugene Younger, Covington.
Trousdale	Mrs. L. E. McCluskey, Hartsville.
Unicoi	R. H. W. Gilbert, Erwin.
Union	W. H. Thomas, Maynardville.
Van Buren	C. M. Clark, Spencer.
Warren	J. B. Clark, McMinnville.
Washington	J. C. Berry, Jonesboro.
Wayne	Jno. W. Gallien, Waynesboro.
Weakley	F. Y. Fuqua, Dresden.
White	W. E. Shockley, Sparta.
Williamson	Fred J. Page, Franklin.
Wilson	G. W. Alexander, Lebanon.
TEXAS.	
Anderson	E. F. Rollins, Palestine.
Andrews	J. W. Irivin, Andrews.
Angelina	W. A. O'Quinn, Lufkin.
Aransas	Joe A. Harper, Rockport.
Archer	Geo. W. Alexander, Archer City.
Armstrong	H. L. Mobley, Claude.
Atascosa	Hiram D. Rhode, Jourdanton.
Austin	W. S. Smith, Bellville.
Bailey	R. J. Klump, Muleshoe.
Bandera	J. A. Eames, Bandera.
Bastrop	Fred Haynie, Bastrop.
Baylor	Nat G. Mitchell, Seymour.
Bee	Fannie Dobie, Beeville.
Bell	P. L. Stone, Belton.
Bexar	W. A. Thurman, San Antonio.
Blanco	Wm. Martiny, Johnson City.
Borden	J. H. Hannabass, Gail.
Bosque	Mrs. Daisy Bible, Meridian.
Bowie	C. A. Ronham, Boston.
Brazoria	Lettie E. DeFee, Angleton.
Brazos	J. E. Smith, Bryan.
Brewster	M. S. Burke, Alpine.
Briscoe	L. B. Richards, Silverton.
Brooks	J. A. Brooks, Falfurrias.
Brown	Carrie Reaves, Brownwood.
Burleson	Lee Hensley, Caldwell.
Burnet	J. R. Smith, Burnet.
Caldwell	Leona Dodd, Lockhart.
Calhoun	S. L. Marsh, Port Lavaca.
Callahan	B. G. Chrisman, Baird.
Cameron	P. D. Kennamer, Brownsville.
Camp	G. T. Barnes, Pittsburg.
Carson	J. A. Whiteside, Panhandle.
Cass	J. B. McClung, Linden.
Castro	B. D. Woodlee, Dimmitt.
Chambers	Joe F. Willson, Anahuac.
Cherokee	W. B. Thompson, Rusk.
Childress	Mable Hare, Childress.
Clay	Hugh Moore, Henrietta.
Cochran	J. H. Moore, Lubbock.
Coke	E. J. Stockton, Robert Lee.
Coleman	C. L. South, Coleman.
Collin	W. S. Smith, McKinney.
Collingsworth	C. C. Small, Wellington.
Colorado	B. H. Meinert, Columbus.
Comal	Carl Beeper, New Braunfels.
Comanche	H. L. Gantz, Comanche.
Concho	R. Davenport, Paint Rock.
Cooke	F. J. Clement, Gainesville.
Coryell	H. T. Hall, Gatesville.
Cottle	Mrs. Edith Jones, Paducah.
Crockett	Chas. F. Davidson, Ozona.
Crosby	Pink L. Parrish, Crosbyton.
Culberson	W. F. Neill, Van Horn.
Dallam	A. M. Reese, Dalhart.
Dallas	A. F. McDonald, Dallas.

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III.—County and Other Local Superintendents of Schools—Continued.

County.	County superintendent.
TEXAS—contd.	
Dawson	J. R. Lowrie, Lamesa.
Deaf Smith	W. M. Megert, Hereford.
Delta	Lillie Carrell, Cooper.
Denton	L. A. Allison, Denton.
De Witt	H. B. Montgomery, Cuero.
Dickens	Chas. McLaughlin, Dickens.
Dimmitt	Wm. H. Davis, Carrizo Springs.
Donley	W. T. Link, Clarendon.
Duval	D. A. Parr, San Diego.
Eastland	Ulala Howard, Eastland.
Ector	J. T. Cross, Odessa.
Edwards	A. P. Allison, Rocksprings.
Ellis	John Olsen, Waxahachie.
El Paso	Myra C. Winkler, El Paso.
Erath	Mary Marrs, Stephenville.
Falls	Lucile Rogers, Marlin.
Fannin	F. A. Spencer, Bonham.
Fayette	G. A. Stierling, La Grange.
Fisher	Henry L. De Busk, Roby.
Floyd	W. B. Clark, Floydada.
Foard	G. L. Burk, Crowell.
Fort Bend	Minnie M. Mayes, Richmond.
Franklin	W. R. Irby, Mount Vernon.
Freestone	E. J. Hood, Fairfield.
Frio	Mrs. Mena Betts, Pearsall.
Gaines	T. O. Stark, Seminole.
Galveston	Tom B. Blackstone, Galveston.
Garza	H. G. Smith, Post.
Gillespie	A. H. Kneese, Fredericksburg.
Glasscock	U. E. Bailey, Garden City.
Goliad	Mrs. Bessie Haydon, Goliad.
Gonzales	G. E. Bradley, Gonzales.
Gray	John Ayres, Lefors.
Grayson	Geo. W. Acton, Sherman.
Gregg	S. L. Wilson, Longview.
Grimes	George L. Barron, Anderson.
Guadalupe	Max H. Weinert, Seguin.
Hale	L. D. Griffin, Plainview.
Hall	M. E. McNally, Memphis.
Hamilton	A. T. Jones, Hamilton.
Hansford	A. H. Storrs, Hansford.
Hardeman	Mrs. Frances Bone, Quanah.
Hardin	J. W. McDonald, Kountze.
Harris	W. G. Smiley, Houston.
Harrison	J. W. Cyphers, Marshall.
Hartley	W. R. Slaton, Channing.
Haskell	Mrs. Ed. Robertson, Haskell.
Hays	Wilma Allen, San Marcos.
Hemphill	J. E. Stephens, Canadian.
Henderson	B. P. Smith, Athens.
Hidalgo	J. S. Bunn, Edinburg.
Hill	Frank Van Winkle, Hillsboro.
Hockley	J. R. Evans, Ropersville.
Hood	R. M. Mugg, Granbury.
Hopkins	B. F. Vanderslice, Sulphur Springs.
Houston	J. H. Rosser, Crockett.
Howard	J. T. Brooks, Big Spring.
Hudspeth	P. A. Hazzard, Sierra Blanca.
Hunt	E. P. Thomas, Greenville.
Hutchinson	M. G. Mathis, Plemons.
Irion	W. W. Carson, Sherwood.
Jack	H. W. Dobson, Jacksboro.
Jackson	Musa Irby, Edna.
Jasper	I. J. Hargis, Jasper.
Jeff Davis	J. W. Merrill, Fort Davis.
Jefferson	Mary Sandell, Beaumont.
Jim Hogg	A.M. Brumfield, Hebbronville.
Jim Wells	Lela B. Du Bose, Alice.
Johnson	Victor B. Penuel, Cleburne.
Jones	John C. Thompson, Anson.
Karnes	L. P. Lightsey, Karnes City.
Kaufman	Mary E. Nash, Kaufman.
Kendall	J. A. Phillip, Boerne.
Kent	B. T. Vardiman, Clairemont.
Kerr	Lee Wallace, Kerrville.
Kimble	Weaver H. Baker, Junction.
King	J. F. Witherspoon, Guthrie.
Kinney	John H. Stadler, Brackettville.
Kleberg	Ben F. Wilson, Kingsville.
Knox	J. M. Morgan, Benjamin.
Lamar	Mysia Robinson, Paris.
Lamb	R. C. Hopping, Olton.
Lampasas	W. H. Adkins, Lampasas.
La Salle	G. A. Welhausen, Cotulla.
Lavaca	Frank Schoppe, Hallettsville.
Lee	E. McIntosh, Giddings.
Leon	W. R. Moore, Centerville.
Liberty	W. C. Crowley, Liberty.
Limestone	Mrs. Cora Ferguson, Groesbeck.
Lipscomb	W. E. Shutterly, Lipscomb.
Live Oak	T. H. Miller, George West.
Llano	A. E. Moore, Llano.
Loving	Jas. F. Ross, Pecos.
Lubbock	E. R. Haynes, Lubbock.
Lynn	J. W. Elliott, Tahoka.
Madison	Loula Malone, Madisonville.
Marion	Mrs. I. C. Donnelly, Jefferson.
Martin	A. G. Odom, Stanton.
Mason	John T. Banks, Mason.
Matagorda	Mabel Kennedy, Bay City.
Maverick	W. A. Bonnet, Eagle Pass.
McCulloch	W. M. Deans, Brady.
McLennan	R. L. Abbott, Waco.
McMullen	D. B. Martin, Tilden.
Medina	W. N. Saathoff, Hondo.
Menard	J. D. Scruggs, Menard.
Midland	J. M. DeArmond, Midland.
Milam	Jim F. Chadwick, Cameron.
Mills	L. E. Patterson, Goldthwaite.
Mitchell	J. C. Hall, Colorado.
Montague	R. C. Poteet, Montague.
Montgomery	P. R. Clarke, Conroe.
Moore	L. W. Wall, Dumas.
Morris	Irma Stokes, Daingerfield.
Motley	C. L. Glenn, Matador.
Nacogdoches	E. Maud Lewis, Nacogdoches.
Navarro	Albert J. Davis, Corsicana.
Newton	E. A. Lindsey, Newton.
Nolan	Minnie E. Fowler, Sweetwater.
Nueces	Nat Benton, Corpus Christie.
Ochiltree	J. M. Grigsby, Perryton.
Oldham	Jas. E. May, Vega.
Orange	Mrs. H. W. McGill, Orange.
Palo Pinto	Mrs. Edith Clark, Palo Pinto.
Panola	M. Shaw, Carthage.
Parker	V. P. Craver, Weatherford.
Parmer	James D. Hamlin, Farwell.
Pecos	Howell Johnson, Fort Stockton.
Pork	W. J. Tullos, Livingston.
Potter	R. C. Johnson, Amarillo.
Presidio	K. C. Miller, Marfa.
Rains	H. D. Garrett, Emory.
Randall	Worth A. Jennings, Canyon.
Real	Ed. A. Kelly, Leakey.
Reagan	W. W. Pittman, Stiles.
Red River	Mrs. C. Stephens, Clarksville.
Reeves	Jas. F. Ross, Pecos.
Refugio	J. Turner Vance, Refugio.
Roberts	J. K. McKenzie, Miami.
Robertson	Clara Story, Franklin.
Rockwall	J. K. Wells, Rockwall.
Runnells	John J. Bugg, Ballinger.
Rusk	G. C. Padgett, Henderson.
Sabine	O. P. Pate, Hemphill.
San Augustine	W. E. Mathews, San Augustine.
San Jacinto	D. M. Love, Cold Springs.
San Patricio	Mrs. Susan Sipes, Sinton.
San Saba	G. L. Huckaby, San Saba.
Schleicher	C. A. Womack, El Dorado.
Scurry	Nealy Squires, Snyder.
Shackelford	Richard Dyess, Albany.
Shelby	W. M. Chandler, Center.
Sherman	J P. Reeder, Stratford.
Smith	R. D. Boulter, Tyler.
Somervell	R. L. Bryan, Glen Rose.
Starr	Sam P. Vale, Rio Grande City.

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III.—County and Other Local Superintendents of Schools—Continued.

County.	County superintendent.
TEXAS—contd.	
Stephens	Emma T. Hope, Breckenridge.
Sterling	B. T. Withers, Sterling City.
Stonewall	M. Sudie Abbott, Aspermont.
Sutton	L. W. Elliott, Sonora.
Swisher	J. E. Swepsten, Tulia.
Tarrant	B. Carroll, Fort Worth.
Taylor	Ada D. Pearce, Abilene.
Terrell	G. J. Henshaw, Sanderson.
Terry	D. J. Broughton, Brownfield.
Throckmorton	J. L. Smith, Throckmorton.
Titus	P. H. Rogers, Mount Pleasant.
Tom Green	J. H. Armstrong, San Angelo.
Travis	Leon G. Halden, Austin.
Trinity	W. A. Reese, Groveton.
Tyler	Bronson C. Howell, Woodville.
Upshur	G. W. McPeek, Gilmer.
Upton	J. H. Felps, Rankin.
Uvalde	Mamie Anthon, Uvalde.
Val Verde	Josephine Jones, Del Rio.
Van Zandt	B. E. Youngblood, Canton.
Victoria	Blanche Crutsinger, Victoria.
Walker	J. C. Thomas, Huntsville.
Waller	Adice Cameron, Hempstead.
Ward	Geo. H. Tucker, Barstow.
Washington	Fredericke Turner, Brenham.
Webb	B. Richardson, Laredo.
Wharton	Elizabeth McIver, Wharton.
Wheeler	L. D. Miller, Wheeler.
Wichita	Burl Bryant, Wichita Falls.
Wilbarger	J. N. Fulcher, Vernon.
Willacy	J. S. Thornham, Sarita.
Williamson	Mary S. Sanders, Georgetown.
Wilson	J. E. Swift, Floresville.
Winkler	Will A. Martin, Kermit.
Wise	B. F. Roe, Decatur.
Wood	J. U. Searcy, Quitman.
Yoakum	R. P. Moreland, Plains.
Young	H. H. Avants, Graham.
Zapata	J. M. Sanchez, Zapata.
Zavala	N. H. Hunt, Crystal City.
UTAH.	
Beaver	J. Frank Day, Beaver.
Boxelder	C. H. Skidmore, Brigham.
Cache	R. V. Larson, Logan.
Carbon	D. C. Woodward, jr., Price.
Daggett	Paul C. Miner, Manila.
Davis	H. C. Burton, Farmington.
Duchesne	James H. Moore, Duchesne.
Emery	A. L. Leonard, Huntington.
Garfield	F. G. Gardiner, Panguitch.
Grand	D. S. L. McCorkle, Moab.
Iron	H. Claude Lewis, Cedar City.
Juab:	
Juab dist	Ray Stewart, Nephi.
Tintic dist	I. L. Williamson, Eureka.
Kane	D. D. Rust, Kanab.
Millard	Alonzo Huntsman, Fillmore.
Morgan	J. R. Tippetts, Morgan.
Piute	D. H. Robinson, Junction.
Rich	G. N. Weston, Laketown.
Salt Lake:	
Granite dist	D. W. Parratt, Salt Lake City.
Jordan dist	D. C. Jensen, Sandy, R. F. D. 2.
Sampete:	
North dist	J. W. Anderson, Mt. Pleasant.
South dist	E. T. Reid, Manti.
San Juan	Parley Woolsey, Blanding.
Sevier	A. J. Ashman, Richfield.
Summit:	
North dist	David H. Fowler, Coalville.
South dist	Howard V. Alston, Kamas.
Tooele	E. M. Reid, Tooele.
Uintah	Heber S. Olson, Vernal.
Utah:	
Alpine dist	J. H. Walker, American Fork.
Nebo dist	L. J. Nuttall, jr., Spanish Fork.
Wasatch	D. A. Broadbent, Heber City.
Washington	W. O. Bentley, jr., St. George.
Wayne	Joseph Hickman, Loa.
Weber	B. A. Fowler, Ogden.

Supervision district.	District superintendent.
VERMONT.	
Addison County:	
Northwest district. Addison, Ferrisburg, Monkton, Panton, Vergennes, Waltham.	W. L. Coggins.
Northeast district. Bristol, Starksboro, Lincoln, New Haven.	W. A. Beebe, Bristol.
Central district. Cornwall, Middlebury T., Middlebury I., Ripton, Weybridge, Salisbury.	Arthur W. Eddy, Middlebury.
Southwest district. Shoreham, Bridport, Orwell, Benson, West Haven.	V. C. Smith, Orwell.
VERMONT—contd.	
Bennington County:	
Central district. Arlington, Sunderland, Manchester, Sandgate, Dorset.	B. P. Hamlin, Manchester.
Southwest district. Bennington T., Glastonbury, North Pownal, North Bennington, Pownal, Shaftsbury, Woodford.	A. W. Varney, Bennington.
Caledonia County:	
North district. West Burke I., Burke T., Sutton, Newark, East Haven.	Garfield A. Jemieson, West Burke.

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III.—County and Other Local Superintendents of Schools—Continued.

Supervision district.	District superintendent.
VERMONT—contd.	
Caledonia County—Contd.	
North Central district. Lyndonville I., Lyndon I., Lyndon T., Kirby, Sheffield, Wheelock.	Martin E. Daniels, Lyndonville.
South Central district. Barnet, Peacham, Walden, Waterford, Danville.	Harvey Burbank, Danville.
South district. Wells River I., Newbury, Groton, Ryegate.	Leonard D. Smith, Wells River.
Chittenden County:	
East district. Richmond, Jericho, Underhill I., Underhill T., Bolton.	E. L. Clark, Richmond.
Central district. Essex Junction I., Essex T., Williston, Winooski I., Colchester.	Minnie E. Hays, Essex Junction.
South district. Shelburne, Charlotte, South Burlington, St. George, Huntington, Hinesburg.	Burnham A. Colby, Shelburne.
Essex County:	
North district. Canaan, Brighton, Norton, Lemington, Bloomfield, Brunswick.	B. E. Stover, North Stratford, N. H.
South district. Lunenburg, Concord, Victory, Granby, Guildhall, Maidstone.	S. C. Harding, Concord.
Franklin County:	
Northwest district. Swanton, Highgate, St. Albans T., Georgia, Milton T., Milton I., Westford.	Homer E. Hunt, Swanton.
Central district. Enosburg Falls I., Enosburg T., Franklin, Sheldon.	Frederick W. Wallace, Enosburg Falls.
VERMONT—contd.	
Franklin County—Continued.	
Northeast district. Richford, Berkshire, Montgomery.	Edwin F. Greene, Richford.
Southeast district. Bakersfield, Fairfield, Fletcher.	Erle R. Holmes, East Fairfield.
Fairfax district. Fairfax.	E. W. Middleton, Fairfax.
Grand Isle County:	
Grand Isle district. Alburg, Isla La Motte, North Hero, South Hero, Grand Isle.	Fred E. Cargill, Alburg.
Lamoille County:	
East district. Hyde Park, Waterville, Belvidere, Eden, Wolcott.	R. D. McAlister, Hyde Park.
South district. Morristown, Stowe, Elmore.	Carlton D. Howe, Morrisville.
Cambridge district. Cambridge.	W. H. Venable, Jeffersonville.
Johnson district. Johnson.	Ralph C. Mayo, Johnson.
Orange County:	
East district. Bradford, Fairlee, Vershire, Corinth, Cookville I., Topsham.	D. B. Locke, Bradford.
Northwest district. Chelsea, Williamstown, Washington, Orange.	M. A. Outland, Williamstown.
Southwest district. Randolph I., Randolph T., Brookfield, Braintree.	Geo. W. Patterson, Randolph.
Southeast district. Thetford, West Fairlee, Strafford, Norwich, Sharon.	Ralph B. Low, South Strafford.
Orleans County:	
North district. North Troy, Troy, Jay, Westfield, Lowell, Coventry, Irasburg, Newport, Newport Ctr.	O. L. Dugan, Newport Ctr.

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III.—County and Other Local Superintendents of Schools—Continued.

Supervision district.	District superintendent.
VERMONT—contd.	
Orleans County—Continued.	
East district... Charleston, Holland, Morgan, Brownington, Westmore.	Edwin S. Boyd, West Charleston.
Central district. Barton I., Orleans I., Barton T. Glover, Albany.	Clayton L. Erwin, Barton.
South district.. Hardwick I., Hardwick T., Stannard, Craftsbury, Greensboro.	Clarence L. Cowles, Craftsbury.
Rutland County:	
North district.. Brandon I., Brandon T., Hubbardton, Sudbury, Whiting, Leicester, Goshen, Chittenden, Pittsford.	M. A. Sturtevant, Brandon.
Central district. Castleton, West Rutland, Ira, Fair Haven T., Fair Haven I., Rutland T.	Philip R. Leavenworth, Castleton.
Southwest district. Poultney, Wells, Middletown Springs, Pawlet, Rupert.	R. R. Morrow, W. Pawlet.
South district.. Wallingford, Mendon, Clarendon, Tinmouth, Danby, Mt. Tabor.	Mary A. Murphy, Wallingford.
Washington County:	
Northeast district. Cabot, Calais, Woodbury, Marshfield.	H. E. Jackman, Cabot.
Central district. East Montpelier, Plainfield, Worcester, Middlesex, Moretown.	Walter B. Lance, Plainfield.
South district.. Northfield I., Northfield T., Roxbury, Berlin.	Charles P. McKnight, Northfield.
West district... Waterbury, Duxbury, Fayston, Warren, Waitsfield	M. H. Willis, Waterbury.
Barre Town district. Barre Town.	Waldo Glover, Barre.
VERMONT—contd.	
Windham County:	
Northwest district. Londonderry, Weston, Winhall, Peru, Landgrove, Jamaica, Windham.	F. R. Adams, South Londonderry.
Central district. Newfane, Townshend, Dover, Wardsboro, Grafton, Athens, Brookline, Stratton, Marlboro.	C. H. Straitiff, Townshend.
Southeast district. Dummerston, Guilford, Halifax, Putney, Vernon.	Ethel A. Eddy, Brattleboro.
Southwest district. Wilmington, Whittingham, Readsboro, Stamford, Somerset, Searsburg.	Frank E. Sawyer, Wilmington.
Windsor County:	
North district.. Bethel I., Bethel T., Royalton, Tunbridge.	Philo G. Noon, South Royalton.
Central district. Woodstock, Bridgewater, Barnard, Pomfret.	Evelyn L. Fuller, Woodstock.
East district... Hartland, West Windsor, Reading.	
South district.. Chester, Weathersfield, Cavendish, Duttonsville I., Baltimore, Andover.	Percy H. Blake, Chester.
West district... Ludlow, Plymouth, Mt. Holly, Shrewsbury.	Geo. B. Whitney, Ludlow.
Northwest district. Rochester I., Rochester T., Hancock, Granville, Pittsfield, Sherburne, Stockbridge.	L. L. Chamberlain, Rochester.
Windsor district. Windsor.	E. K. Boak, Windsor.

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III.—County and Other Local Superintendents of Schools—Continued.

County.	County superintendent.
VIRGINIA.	
Accomac	G. C. Joynes, Onancock.
Albemarle	A. L. Bennett, Charlottesville.
Alexandria	Fletcher Kemp, Rosslyn.
Alleghany	J. G. Jeter, Covington.
Amelia	W. R. Wrigglesworth, Black-Stone.
Amherst	W. L. Tucker, Amherst.
Appomatox	N. R. Featherston, Pamplin.
Augusta	F. M. Somerville, Staunton.
Bath	Bruce R. Richardson, Hot Springs.
Bedford	C. M. Abbot, Bellevue.
Bland	J. A. Wagner, Bland.
Botetourt	E. A. Painter, Fincastle.
Brunswick	W. V. Valentine, Lawrenceville.
Buchanan	M. L. Combs, Grundy.
Buckingham	John A. Twyman, Wingina.
Campbell	J. J. Fray, Gladys.
Caroline	W. A. Vaughan, Bowling Green.
Carroll	J. Lee Cox, Woodlawn.
Charles City	Herman L. Harris, Toano.
Charlotte	E. H. Hall, Drakes Branch.
Chesterfield	T. C. Williams, Chester.
Clarke	L. D. Cline, Winchester.
Craig	F. H. Huffman, Captain.
Culpeper	T. W. Hendricks, Culpeper.
Cumberland	R. M. Tisinger, Cumberland.
Dickenson	D. D. French, Clintwood.
Dinwiddie	J. H. Duane, Ford.
Elizabeth City	J. H. Brent, Hampton.
Essex	W. G. Rennolds, Center Cross.
Fairfax	M. D. Hall, Burke.
Fauquier	F. O. Smith, Warrenton.
Floyd	Issac L. Epperly, Floyd.
Fluvanna	T. H. Shepherd, Wilmington.
Franklin	R. A. Prillaman, Rocky Mount
Frederick	(See Clarke.)
Giles	R. H. Farrier, Newport.
Gloucester	J. W. Kenney, Bena.
Goochland	J. Milton Shue, Goochland.
Grayson	Kyle T. Cox, Independence.
Greene	A. W. Yowell, Peola Mills.
Greensville	Henry Maclin, North Emporia.
Halifax	H. J. Watkins, South Boston.
Hanover	J. Walton Hall, Ashland.
Henrico	A. C. Cooper, Richmond, Henrico Court House.
Henry	W. B. Gates, Martinsville.
Highland	R. E. Mauzy, Hightown.
Isle of Wight	Gavin Rawls, Carrsville.
James City	(See Charles City.)
King and Queen	(See Essex.)
King George	Mary Harwood, King George.
King William	R. M. Bell, Venter.
Lancaster	Frank W. Lewis, Morattico.
Lee	W. A. Wygal, Jonesville.
Loudoun	O. L. Emerick, Purcellville.
Louisa	Frank T. West, Louisa.
Lunenburg	A. B. Wilson, Victoria.
Madison	(See Greene.)
Mathews	G. G. Anderton, Saluda.
Mecklenburg	C. B. Green, Boydton.
Middlesex	(See Mathews.)
Montgomery	E. S. Hagan, Christiansburg.
Nansemond	R. Moore Williams, Driver.
Nelson	W. E. Kidd, Lovingston.
New Kent	(See Charles City.)
Norfolk	James Hurst, Norfolk.
Northampton	D. W. Peters, Cape Charles.
Northumberland	(See Lancaster.)
Nottoway	(See Amelia.)
Orange	C. P. Cowherd, Gordonsville.
Page	John H. Booton, Luray.
Patrick	J. Fay Reynolds, Stuart.
Pittsylvania	F. B. Watson, jr., Chatham.
Powhatan	P. C. Williams, Fine Creek Mills.
VIRGINIA—contd.	
Prince Edward	T. J. McIlwaine, Hampden-Sidney.
Prince George	R. K. Hoke, Hopewell.
Princess Anne	J. H. Carroll, Oceana.
Prince William	Chas. R. McDonald, Gainesville.
Pulaski	E. L. Darst, Dublin.
Rappahannock	H. D. Hite, Front Royal.
Richmond	Blake T. Newton, Hague.
Roanoke	R. E. Cook, Salem.
Rockbridge	R. M. Irby, Lexington.
Rockingham	J. C. Myers, Harrisonburg.
Russell	R. N. Anderson, Lebanon.
Scott	W. D. Smith, Gate City.
Shenandoah	C. V. Shoemaker, Woodstock.
Smyth	B. E. Copenhaver, Marion.
Southampton	Robert M. Newton, Franklin.
Spotsylvania	J. H. Chiles, Fredericksburg.
Stafford	W. D. Peyton, Fredericksburg, R. F. D. 2.
Surry	L. N. Savedge, Alliance.
Sussex	W. W. Edwards, Yale.
Tazewell	A. S. Greever, Tazewell.
Warren	(See Rappahannock.)
Warwick	B. C. Charles, Denbigh.
Washington	W. J. Edmondson, Abingdon.
Westmoreland	(See Richmond.)
Wise	J. J. Kelly, jr., Wise.
Wythe	J. A. C. Hurt, Wytheville.
York	(See Warwick.)
WASHINGTON	
Adams	Olive M. Hoffhine, Ritzville.
Asotin	M. Kathryn Pharis, Asotin.
Benton	J. W. Gilkey, Prosser.
Chelan	E. C. Bowersox, Wenatchee.
Clallam	Ina M. McNutt, Port Angeles.
Clarke	Chester F. Bennett, Vancouver.
Columbia	Bertha E. Windust, Dayton.
Cowlitz	Joseph Gardner, Kalama.
Douglas	Mrs. Annie M. Walker, Waterville.
Ferry	Eva Hane, Republic.
Franklin	Edith K. Peck, Pasco.
Garfield	Frances J. Cox, Pomeroy.
Grant	J. Elmer Bovey, Ephrata.
Grays Harbor	Geneva A. Johnson, Montesano.
Island	F. D. Newberry, Coupeville.
Jefferson	Edith Delanty, Port Townsend.
King	Thos. E. Hulse, Seattle.
Kitsap	W. G. Callow, Port Orchard.
Kittitas	Dora W. Lee, Ellensburg.
Klickitat	C. M. Ryman, Goldendale.
Lewis	Z. May Meighen, Chehalis.
Lincoln	W. S. Shelton, Davenport.
Mason	Jean T. Fredson, Shelton.
Okanogan	M. Brinkerhoff, Okanogan.
Pacific	Mrs. Arepta Murdock, South Bend.
Pend Oreille	Charlotte Spalding, Newport.
Pierce	Minnie D. Bean, Tacoma.
San Juan	F. W. Cobb, Friday Harbor.
Skagit	Emma Ratchiffe, Mount Vernon.
Skamania	W. E. Miller, Stevenson.
Snohomish	J. A. Jacobson, Everett.
Spokane	F. V. Yeager, Spokane.
Stevens	W. O. Cummings, Colville.
Thurston	C. L. Carroll, Olympia.
Wahkiakum	Mrs. May B. Watkins, Cathlamet.
Walla Walla	Mary Gilliam, Walla Walla.
Whatcom	Mrs. Jennie M. Robin, Bellingham.
Whitman	H. A. Ellis, Colfax.
Yakima	Mae L. Mark, Yakima.

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III.—County and Other Local Superintendents of Schools—Continued.

County.	County superintendent.
WEST VIRGINIA.	
Barbour	E. A. Hunt, Philippi.
Berkeley	Palmer Keesecker, Martinsburg.
Boone	M. T. Miller, Madison.
Braxton	W. B. Golden, Flatwoods.
Brooke	S. C. Underwood, Wellsburg.
Cabell	Edward Mays, Huntington.
Calhoun	T. C. Cain, Grantsville.
Clay	R. E. Slack, Clay.
Doddridge	H. D. Snider, West Union.
Fayette	J. T. Peters, Fayetteville.
Gilmer	Dallas C. Bailey, Glenville.
Grant	H. F. Groves, Petersburg.
Greenbrier	L. O. Haynes, Smoot.
Hampshire	Arthur Slonaker, Dillons Run.
Hancock	H. O. Miller, New Cumberland.
Hardy	E. A. Hawse, Baker.
Harrison	Carl S. Lawson, Clarksburg.
Jackson	W. C. Casto, Ripley.
Jefferson	Isaac N. Bonham, Summit Point.
Kanawha	Geo. W. Jenkins, jr., Charleston.
Lewis	Wade Linger, Weston.
Lincoln	G. L. Pauley, Hamlin.
Logan	E. F. Skaggs, Logan.
Marion	I. A. Barnes, Fairmont.
Marshall	H. E. Carmichael, Moundsville.
Mason	Alonzo C. Kelly, Point Pleasant.
Mercer	B. F. King, Princeton.
Mineral	Luke McDowell, Keyser.
Mingo	Floyd Evans, Kermit.
Monongalia	Lynn Hastings, Morgantown.
Monroe	O. R. Houchins, Alderson.
Morgan	Jesse R. Tyson, Berkeley Springs.
McDowell	W. C. Cook, Welch.
Nicholas	L. O. Bobbitt, Summersville.
Ohio	J. H. Lazear, Wheeling.
Pendleton	John A. Fultz, Franklin.
Pleasants	G. C. McTaggart, St. Marys.
Pocahontas	Douglass McNeill, Marlinton.
Preston	D. K. Mason, Kingwood.
Putnam	W. W. Smith, Paradise.
Raleigh	Otway F. Cooke, Beckley.
Randolph	Troy B. Wilmoth, Elkins.
Ritchie	J. F. Hatfield, Harrisville.
Roane	B. Frank Jarvis, Spencer.
Summers	Lee Harper, Hinton.
Taylor	W. E. Leach, Grafton.
Tucker	R. E. King, Parsons.
Tyler	C. R. Ingraham, Middlebourne.
Upshur	W. O. Hinkle, Buckhannon.
Wayne	W. H. Peters, Wayne.
Webster	Sampson N. Miller, Webster Springs.
Wetzel	F. M. Tuttle, New Martinsville.
Wirt	Leonard C. Dailey, Elizabeth.
Wood	Lawrence C. White, Parkersburg.
Wyoming	G. B. McGraw, Pineville.
WISCONSIN.	
Adams	Mrs. Mary Brearey, Friendship.
Ashland	Thomas F. O'Connell, Ashland.
Barron	Regina Kohten, Barron.
Bayfield	Jessie N. Smith, Washburn.
Brown	E. A. Seymour, Green Bay.
Buffalo	H. H. Liebenberg, Alma.
Burnett	Anna Ryss, Grantsburg.
Calumet	W. F. Stauss, Chilton.
Chippewa	Anna Johnson, Chippewa Falls.
Clark	O. J. Thompson, Neillsville.
Columbia	Laura B. Jamieson, Portag.
Crawford	A. F. Schoonover, Gays Mills.
Dane:	
First dist.	Sylvanus Ames, Stoughton.
Second dist.	Thos. S. Thompson, Mount Horeb.
Dodge	John Kelley, Juneau.
Door	Katherine Conley, Sturgeon Bay.
Douglas	Vera C. Rehnstrand, Superior.
Dunn	Earle Edes, Menomonie.
Eau Claire	Lillia E. Johnson, Eau Claire.
Florence	Mrs. G. W. Kinnear, Florence.
Fond du Lac	Orson B. Morse, Fond du Lac.
Forest	Linda Schmidt, Crandon.
Grant	F. E. Ralph, Lancaster.
Green	John N. Burns, Monroe.
Green Lake	George V. Kelley, Princeton.
Iowa	R. E. Hoskins, Dodgeville.
Iron	Ida Bradley, Hurley.
Jackson	Mae E. Hardie, Black River Falls.
Jefferson	A. J. Thorne, Jefferson.
Juneau	Leah H. Diehl, Mauston.
Kenosha	J. J. Kerwin, Silver Lake.
Kewaunee	Thos. Frawley, Kewaunee.
La Crosse	Mrs. Blanche Chamberlain, Bangor.
La Fayette	W. W. Woolworth, Darlington.
Langlade	Bertha Moss, Antigo.
Lincoln	W. S. Freeman, Merrill.
Manitowoc	Lillian L. Chloupek, Manitowoc.
Marathon	J. E. Giessel, Wausau.
Marinette	Mrs. Gertrude Schwittay, Marinette.
Marquette	Samuel Long, Montello.
Milwaukee	E. T. Griffin, Milwaukee.
Monroe	Harriet Hutson, Sparta.
Oconto	Sanford Wilson, Oconto.
Oneida	Martha Johnson, Rhinelander.
Outagamie	Florence Jenkins, Appleton.
Ozaukee	Richard F. Beger, Fredonia.
Pepin	Cynthia Carlisle, Durand.
Pierce	H. B. Aasterud, Ellsworth.
Polk	Evelyn Weed, Balsam Lake.
Portage	Alice Gordon, Stevens Point.
Price	Mrs. Ida Ehle, Phillips.
Racine	Edith McEachron, Union Grove.
Richland	R. B. Nolan, Richland Center.
Rock	O. D. Antisdel, Janesville.
Rusk	R. H. Burns, Ladysmith.
St. Croix	H. A. Aune, Baldwin.
Sauk	Jessie Martiny, Baraboo.
Sawyer	Mrs. Josephine Grafton, Hayward.
Shawano	L. D. Roberts, Shawano.
Sheboygan	H. C. Dornbush, Plymouth.
Taylor	Emma M. Lupinsky, Medford.
Trempeleau	Helen M. Berg, Whitehall.
Vernon	George E. Sanford, Viroqua.
Vilas	Arthur J. Austin, Eagle River.
Walworth	Helen Martin, Elkhorn.
Washburn	Lucy A. Leonard, Shell Lake.
Washington	M. T. Buckley, West Bend.
Waukesha	G. B. Rhoads, Waukesha.
Waupaca	R. C. Bigford, Manawa.
Waushara	Arthur Dietz, Wautoma.
Winnebago	R. E. Sanders, Oshkosh.
Wood	Ruth Bennett, Wisconsin Rapids.
WYOMING.	
Albany	Mrs. N. Artisee Erickson, Laramie.
Big Horn	Mrs. Bertha K. Van Devender Basin.
Campbell	Edith B. George, Gillette.
Carbon	Helen M. Irving, Rawlins.

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III.—County and Other Local Superintendents of Schools—Continued.

County.	County superintendent.	County.	County superintendent.
WYOMING—contd.		WYOMING—contd.	
Converse	Marcia Hollinrake, Douglas.	Natrona	May Hamilton Casper.
Crook	Mrs. Barbara G. Andrews, Sundance.	Niobrara	C. W. Pfeifer, Lusk.
		Park	Margaret E. Walsh, Cody.
Fremont	Bessie Benson, Lander.	Platte	Edith M. Hawes, Wheatland.
Goshen	Mrs. Lulu C. Koenig, Torrington.	Sheridan	Georgine Erlandson, Sheridan.
		Sweetwater	Mrs. Miriam W. Shedden, Rocksprings.
Hot Springs	Mrs. Rose Garrison, Thermopolis.	Uinta	Mrs. Jennie M. Isherwood, Evanston.
Johnson	Mrs. Margaret L. Smith, Buffalo.	Washakie	Mrs. Angeline Wild, Worland.
Laramie	Anna M. Dobbin, Cheyenne.	Weston	Mrs. Frances McD. Harlow, Newcastle.
Lincoln	Mrs. Myra E. Geer, Kemmerer.		

IV.—Superintendents of Public Schools in Cities and Towns.

City.	Population, census of 1920.	Superintendent or supervising principal.	City.	Population, census of 1920.	Superintendent or supervising principal.
ALABAMA.			ARIZONA—contd.		
Alabama City	5,432	E. J. Gilbert.	Globe	7,044	Walter P. Bland.
Albany	7,652	R. W. Cowart.	Jerome	4,030	J. O. Mullen.
Andalusia	4,023	L. E. Brown.	Mesa	3,036	H. E. Hendrix.
Anniston	17,734	David R. Murphey.	Miami	6,689	Charles R. Tupper.
Athens	3,323	J. Frank Jarrell.	Morenci	7,501	W. E. Lutz.
Attalla	3,462	Alice Coleman.	Nogales	5,199	G. H. Madden.
Bessemer	18,674	L. L. Vann.	Phoenix	29,053	John D. Loper.
Birmingham	178,806	C. B. Glenn.	Prescott	5,010	S. H. Martin.
Brewton	2,682	L. O. Kyzar.	Tucson	20,292	Clinton E. Rose.
Brighton	3,665	H. M. Sharpe.	Winslow	3,730	C. C. Grover.
Carbon Hill	2,666		Yuma	4,237	
Decatur	4,752	W. W. Benson.			
Demopolis	2,779	C. B. Gamble.	ARKANSAS.		
Dothan	10,034	B. B. Baker.			
Enterprise	3,013	Lloyd C. Warr.	Arkadelphia	3,311	W. J. Breit.
Eufaula	4,939	H. L. Upshaw.	Batesville	4,299	Sidney Pickens.
Fairfield	5,003	F. D. Graves.	Benton	2,933	Bert Lary.
Florala	2,633	J. P. Doster.	Blytheville	6,447	Harvey H. Haley.
Florence	10,529	F. T. Appleby.	Brinkley	2,714	John Baumgartner.
Gadsden	14,737	W. C. Griggs.	Camden	3,238	W. F. Hall.
Girard	4,942	J. A. Lunceford.	Clarendon	2,638	J. E. Howard.
Greenville	3,471	R. L. Marchman.	Conway	4,564	R. E. Womack.
Huntsville	8,018	Frank W. Williams.	Crossett	2,707	D. C. Hastings.
Jasper	3,246	W. I. Powers.	De Queen	2,517	Pearl Williamson.
Lenett	4,976	C. E. Lunceford.	El Dorado	3,887	Donald MacQueen.
Mobile	60,777	S. S. Murphy.	Fayetteville	5,362	F. S. Root.
Montgomery	43,464	W. R. Harrison.	Fordyce	2,996	J. R. Anders.
Opelika	4,960	J. W. Watson.	Forrest City	3,377	M. S. Smith, jr.
Ozark	2,518	J. Floyd Collins.	Fort Smith	28,870	C. J. Tidwell.
Phoenix	5,432	J. C. McAuley.	Harrison	3,477	W. D. Jeter.
Piedmont	2,645	L. C. Fitts.	Helena	9,112	E. B. Tucker.
Roanoke	3,841	L. L. James.	Hope	4,790	D. L. Paisley.
Selma	15,589	Omer Carmichael.	Hot Springs	11,695	Ury McKenzie.
Sheffield	6,682	L. E. Creel.	Jonesboro	9,384	J. P. Womack.
Talladega	6,546	J. A. Baxley.	Little Rock	65,142	R. C. Hall.
Troy	5,696	E. G. McGhee, jr.	Malvern	3,864	J. L. Pratt.
Tuscaloosa	11,996	J. M. Burnett.	Marianna	5,074	Fred MacChesney.
Tuscumbia	3,855	L. Leftwich.	Mena	3,441	Fred R. Angwin.
Union Springs	4,125	E. S. Pugh.	Morrillton	3,010	H. A. Woodward.
			Newport	3,771	J. H. Patterson.
ALASKA.			North Little Rock	14,048	Thomas C. Abbott.
			Paragould	6,306	J. W. Ramsey.
Juneau	3,058	John E. Lanz.	Pine Bluff	19,280	Junius Jordan.
			Prescott	2,091	C. M. Hirst.
ARIZONA.			Rogers	3,318	J. W. Oliver.
			Russellville	4,505	Frank E. McAnear.
Bisbee	9,205	C. F. Philbrook.	Searcy	2,836	J. R. Bullington.
Clifton	4,163	W. D. Baker.	Siloam Springs	2,569	W. F. Cameron.
Douglas	9,916	R. E. Souers.	Stamps	2,564	H. J. Steele.
Flagstaff	3,186	J. Q. Thomas.	Stuttgart	4,522	Charles F. Perrott.
Glendale	2,737	C. A. McKee.	Texarkana	8,257	S. E. Green.

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IV.—Superintendents of Public Schools in Cities and Towns—Continued.

City.	Population, census of 1920.	Superintendent or supervising principal.
ARKANSAS—contd.		
Trumann	2,598	C. E. Womack.
Van Buren	5,224	D. M. Riggin.
West Helena	6,226	Broadus M. Smith.
Wynne	2,933	M. O. Alcorn.
CALIFORNIA.		
Alameda	28,806	C. J. Du Four.
Alhambra	9,096	Charles E. Barber.
Anaheim	5,526	Charles C. Smith.
Bakersfield	18,638	Charles E. Teach.
Benicia	2,693	H. P. Short.
Berkeley	56,036	H. B. Wilson.
Brawley	5,389	H. F. Willebrandt.
Burbank	2,913	Leonard F. Collins.
Burlingame	4,107	H. E. H. Ruggles.
Calexico	6,223	F. F. Fanning.
Chico	9,339	Charles H. Camper.
Coalinga	2,934	C. L. Geer.
Colton	4,282	G. H. Jantzen.
Corona	4,129	Glen D. Wight.
Coronado	3,289	Fred A. Boyer.
Daly City	3,779	William J. Savage.
Dinuba	3,400	W. N. Davis.
Dunsmuir	2,528	H. A. Burch.
East San Diego	4,148	J. D. Simkins.
El Centro	5,464	A. P. Shibley.
Eureka	12,923	George B. Albee.
Fort Bragg	2,616	Preston W. Smith.
Fresno	45,086	Wm. John Cooper.
Fullerton	4,415	C. A. Marcy.
Gilroy	2,862	E. E. Brownell.
Glendale	13,536	R. D. White.
Grass Valley	4,006	J. S. Hennessy.
Hanford	5,888	C. E. Denham.
Hayward	3,487	Marvin L. Benson.
Hollister	2,781	G. E. Anderson.
Huntington Park	4,513	Willison L. Stuckey.
Inglewood	3,286	G. W. Crozier.
Lindsay	2,576	Sherman L. Brown.
Lodi	4,850	R. J. Custer.
Long Beach	55,593	W. L. Stephens.
Los Angeles	576,673	Mrs. Susan M. Dorsey.
Madera	3,444	O. S. Hubbard.
Martinez	3,858	Alice E. Kelly.
Marysville	5,461	L. P. Farris.
Merced	3,974	C. S. Clark.
Mill Valley	2,554	Herbert H. Matthews.
Modesto	9,241	W. E. Faught.
Monrovia	5,480	A. R. Clifton.
Monterey	5,479	J. H. Graves.
Monterey Park (P. O., Belvidere.)	4,108	(See Alhambra.)
Napa	6,757	O. R. Hull.
National City	3,116	Guy Hudgins.
Needles	2,807	John H. Thompson.
Oakland	216,261	Fred M. Hunter.
Ontario	7,280	C. W. Randall.
Orange	4,884	Geo. C. Sherwood.
Oroville	3,340	Louis A. Trempe.
Oxnard	4,417	R. B. Haydock.
Pacific Grove	2,974	R. H. Down.
Palo Alto	5,900	A. C. Barker.
Pasadena	45,354	John F. West.
Petaluma	6,226	Bruce H. Painter.
Piedmont	4,282	H. W. Jones.
Pittsburg	4,715	Fred S. Ramsdell.
Pomona	13,505	Guy V. Whaley.
Porterville	4,097	W. A. Ferguson.
Red Bluff	3,104	J. D. Sweeney.
Redding	2,962	Frank Forderhase.
Redlands	9,571	Henry G. Clement.
Redondo Beach	4,913	C. A. Langworthy.
CALIFORNIA—con.		
Redwood City	4,020	A. E. Manteith.
Richmond	16,843	W. T. Helms.
Riverside	19,341	A. N. Wheelock.
Roseville	4,477	Warren Eich.
Sacramento	65,908	Charles C. Hughes.
Salinas	4,308	Arthur Walter.
San Bernardino	18,721	Percy R. Davis.
San Diego	74,683	Henry C. Johnson.
San Fernando	3,204	(See Los Angeles.)
San Francisco	506,676	Alfred Roncovieri.
San Gabriel	2,640	John A. Bevington.
Sanger	2,578	Jennie E. Radley.
San Jose	39,642	Walter L. Bachrodt.
San Leandro	5,703	W. O. Davies.
San Luis Obispo	5,895	Arthur H. Mabley.
San Mateo	5,979	Geo. W. Hall.
San Rafael	5,512	Oliver R. Hartzell.
Santa Ana	15,485	John A. Cranston.
Santa Barbara	19,441	Paul E. Stewart.
Santa Clara	5,220	C. W. Townsend.
Santa Cruz	10,917	John W. Linscott.
Santa Maria	3,943	W. C. Conrad.
Santa Monica	15,252	Horace M. Rebok.
Santa Paula	3,967	Charles D. Jones.
Santa Rosa	8,758	Jerome O. Cross.
Sausalito	2,790	C. O. Sharpe.
Selma	3,158	Charles Edgecomb.
South Pasadena	7,652	George C. Bush.
South San Francisco.	4,411	Lewis E. Adams.
Stockton	40,296	Ansel S. Williams.
Taft	3,317	James A. Joyce.
Tulare	3,539	A. W. Ray.
Turlock	3,394	Della B. Heisser.
Upland	2,912	Mrs. Edith S. Troeller.
Vallejo	21,107	Elmer L. Cave.
Venice	10,385	Lewis F. Ferrish.
Ventura	4,342	Arthur L. Vincent.
Visalia	5,753	DeWitt Montgomery.
Watsonville	5,013	T. S. MacQuiddy.
Watts	4,529	James A. Davis.
Whittier	7,997	S. H. Thompson.
Woodland	4,147	C. E. Dingle.
COLORADO.		
Alamosa	3,171	G. W. Allen.
Boulder	11,006	William V. Casey.
Brighton	2,715	N. J. Rice.
Canon City	4,551	O. B. Drake.
Colorado Springs	30,105	Frederick H. Bair.
Delta	2,623	Arthur J. Foster.
Denver	256,491	Jesse H. Newlon.
Durango	4,116	Emory E. Smiley.
Englewood	4,356	W. E. Baker.
Florence	2,629	James P. Eskridge.
Fort Collins	8,755	A. H. Dunn.
Fort Morgan	3,818	Isaac E. Stutsman.
Grand Junction	8,665	R. E. Tope.
Greeley	10,958	G. E. Brown.
La Junta	4,964	Robert M. Tirey.
Lamar	2,512	E. C. Dilley.
Leadville	4,959	Joseph H. Walton.
Longmont	5,848	C. C. Casey.
Loveland	5,065	R. W. Truscott.
Montrose	3,581	Wm. Melcher.
Pueblo:		
District No. 1.	43,050	James H. Risley.
District No. 20		John F. Keating.
Rocky Ford	3,746	R. J. Walters.
Salida	4,689	Edgar Kesner.
Sterling	6,415	John A. Sexson.
Trinidad	10,906	H. M. Corning.
Walsenburg	3,565	S. M. Andrews.

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IV.—Superintendents of Public Schools in Cities and Towns—Continued.

City.	Population, census of 1920.	Superintendent or supervising principal.
CONNECTICUT.		
Ansonia	17,643	Richard T. Tobin.
Berlin	4,298	B. R. Showalter.
Bethel	3,201	Frank A. Berry.
Branford	6,627	Herman S. Lovejoy.
Bridgeport	143,555	Samuel J. Slawson.
Bristol	20,620	Karl A. Reiche.
Canton	2,549	W. M. Strong.
Cheshire	2,855	D. C. Allen.
Danbury	22,325	Frank K. Watson.
Darien	4,184	James F. Williams.
Derby	11,238	John F. Pickett.
East Hartford	11,648	Percival S. Barnes.
East Haven	3,520	Miss M. A. Lanphear.
East Windsor (P. O. Warehouse Point).	3,741	Ernest W. Small.
Enfield	11,719	Grover C. Bowman.
Essex	2,815	Mary G. Collamore.
Fairfield	11,475	Wm. E. Smith.
Farmington	3,844	L. S. Mills.
Glastonbury	5,592	Francis S. Knox.
Greenwich	22,123	Edwin C. Andrews.
Griswold	4,220	Frank H. P. Clement.
Groton	9,227	Fred'k H. Brewer.[1]
Guilford	2,803	Fred L. Drew.
Hamden (P. O. New Haven).	8,611	Margaret L. Keefe.
Hartford	138,036	Thomas S. Weaver.
Killingly	8,178	Horace F. Turner.
Litchfield	3,180	Paul Dillingham.
Manchester	18,370	Alfred F. Howes.
Mansfield	2,574	A. W. Greer.
Meriden	34,764	David Gibbs.
Middletown	22,129	Edward B. Sellew.
Milford	10,193	H. I. Mathewson.
Montville	3,411	V. B. Moody.
Naugatuck	15,051	H. E. Chittenden.
New Britain	59,316	Stanley H. Holmes.
New Canaan	3,895	Henry W. Saxe.
New Haven	162,537	Frank H. Beede.
New London	25,688	Warren A. Hanson.
New Milford	4,781	John Pettibone.
Newtown	2,751	F. H. Johnston.
Norwalk	27,743	G. V. Buchanan.
Norwich	29,685	Edward J. Graham.
Plainfield	7,926	C. L. Butler.
Plainville	4,114	Orrin L. Judd.
Portland	3,644	J. F. Connolly.
Plymouth (P. O. Terryville).	5,942	H. S. Fisher.
Preston	2,743	S. Hussey Reed.
Putnam	8,397	Wm. L. MacDonald.
Ridgefield	2,707	C. D. Bogart.
Seymour	6,781	Ridgley C. Clark.
Shelton	9,475	Harry E. Fowler.
Simsbury	2,958	J. B. McLean.
Southington	8,440	Ernest C. Witham.
Sprague	2,500	
Stafford	5,407	Isadore Dunham.
Stamford	40,067	Frederick S. Camp.
Stonington	10,236	W. R. Snyder.
Stratford (P. O. Bridgeport).	12,347	C. C. Thompson.
Suffield	4,070	H. B. Chapman.
Thomaston	3,993	Raymond N. Brown.
Thompson	5,055	E. F. Kimball.
Torrington	22,055	George J. Vogel.
Trumbull	2,597	F. W. Knight.
Vernon (P. O. Rockville).	8,898	H. O. Clough.
Wallingford	12,010	John W. Kratzer.
Waterbury	91,715	B. W. Tinker.
Waterford	3,935	(See Montville.)
Watertown	6,050	Gordon C. Swift.
West Hartford	8,854	W. H. Hall.
Westport	5,114	John A. Young.
CONNECTICUT—continued.		
Wethersfield	4,342	F. W. Barber.
Windham (P. O. Willimantic).	13,801	Egbert A. Case.
Winchester (P. O. Winsted).	9,019	John Lund.
Windsor	5,620	Daniel Howard.
Windsor Locks	3,554	Leander Jackson.
DELAWARE.		
Dover	4,042	W. B. Thornburgh.
Milford	2,703	Robert E. Shilling.
New Castle	3,854	Henry E. Snavely.
Wilmington	110,168	David A. Ward.
DISTRICT OF COLUMBIA.		
Washington	437,571	F. W. Ballou.
FLORIDA.		
Apalachicola	3,066	R. M. Dorsey.
Arcadia	3,479	P. G. Shaver.
Bartow	4,203	C. A. Parker.
Bradentown	3,868	B. D. Gullett.
Daytona	5,445	J. F. Eastham.
De Land	3,324	B. F. Ezell.
Fernandina	5,457	O. T. Weaver.
Fort Myers	3,678	W. D. Wilson.
Gainesville	6,860	F. W. Buchholz.
Jacksonville	91,558	F. A. Hathaway.
Key West	18,749	U. S. Lowe.
Kissimmee	2,722	D. B. Shaver.
Lake City	3,341	D. S. Dennard.
Lakeland	7,062	G. E. Everett.
Live Oak	3,103	J. A. Holmes.
Miami	29,571	Charles M. Fisher.
Ocala	4,914	H. G. Shealy.
Orlando	9,282	A. B. Johnson.
Palatka	5,102	W. H. Cassels.
Pensacola	31,035	A. S. Edwards.
Plant City	3,729	S. L. Woodward.
Quincy	3,118	R. M. Evans.
St. Augustine	6,192	J. M. Crawell.
St. Petersburg	14,237	Geo. M. Lynch.
Sanford	5,588	T. W. Lawton.
South Jacksonville	2,775	(See Jacksonville.)
Tallahassee	5,637	R. M. Sealey.
Tampa	51,608	J. E. Knight.
West Palm Beach	8,659	Agnes Ballard.
West Tampa	8,463	(See Tampa.)
GEORGIA.		
Albany	11,555	R. E. Brooks.
Americus	9,010	J. E. Mathis.
Athens	16,748	G. G. Bond.
Atlanta	200,616	W. A. Sutton.
Augusta	52,548	Lawton B. Evans.
Bainbridge	4,792	E. G. Elcan.
Barnesville	3,059	Edward T. Holmes.
Brunswick	14,413	Chas. E. Dryden.
Buford	2,500	W. N. Nunn.
Canton	2,679	O. H. Hixon.
Carrollton	4,363	J. N. Haddock.
Cartersville	4,350	L. C. Evans.
Cedartown	4,053	J. E. Purks.
College Park	3,622	L. O. Freeman.
Columbus	31,125	R. B. Daniel.
Cordele	6,538	Gordon G. Singleton.
Covington	3,203	H. B. Robertson.
Cuthbert	3,022	Robert G. Hall.
Dalton	5,222	J. H. Watson.
Dawson	3,504	H. O. Read.
Decatur	6,150	G. W. Glausier.

[1] Chairman board of school visitors.

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IV.—Superintendents of Public Schools in Cities and Towns—Continued.

City.	Population, census of 1920.	Superintendent or supervising principal.
GEORGIA—contd.		
Douglas	3,401	W. A. Little.
Dublin	7,707	W. P. Martin.
Eastman	2,707	C. O. Stubbs.
East Point	5,241	J. R. Campbell.
Eatonton	2,519	Joseph F. Muldrow.
Elberton	6,475	B. M. Grier.
Fitzgerald	6,870	Ulric J. Bennett.
Fort Valley	3,223	Ralph Newton.
Gainesville	6,272	J. A. Mershon.
Griffin	8,240	J. A. Jones.
Hawkinsville	3,070	M. W. Harris.
Kirkwood	2,934	J. B. Lockhart.
Lagrange	17,038	F. F. Rowe.
Macon	52,995	C. H. Bruce.
Manchester	2,776	M. O. McCord.
Marietta	6,190	C. A. Keith.
Milledgeville	4,619	Kyle T. Alfriend.
Monroe	3,211	C. W. Reid.
Moultrie	6,789	J. Harold Saxon.
Newnan	7,037	B. F. Pickett.
Pelham	2,640	T. H. Wilkinson.
Porterdale	2,880	Ethel Belcher.
Quitman	4,393	H. D. Knowles.
Rome	13,252	B. F. Quigg.
Sandersville	2,695	J. F. Lambert.
Savannah	83,252	Carleton B. Gibson.
Statesboro	3,807	R. M. Monts.
Tallapoosa	2,719	A. L. Brewer.
Thomaston	2,502	Mark A. Smith.
Thomasville	8,196	B. B. Broughton.
Tifton	3,005	A. H. Moon.
Toccoa	3,567	Edmund Wroe.
Valdosta	10,783	A. G. Cleveland.
Vidalia	2,860	
Washington	4,208	W. T. Foster.
Waycross	18,068	A. G. Miller.
Waynesboro	3,311	Jack Lance.
Winder	3,335	J. P. Cash.
IDAHO.		
Blackfoot	3,937	Ernest D. Bloom.
Boise	21,393	P. J. Zimmers.
Burley	5,408	
Caldwell	5,106	J. J. Rae.
Coeur d'Alene	6,447	Theodore B. Shank.
Idaho Falls	8,064	R. H. Snyder.
Kellogg	3,017	Mrs. Laura Butz.
Lewiston	6,574	Joel Jenifer.
Malad City	2,598	David Wangsgard.
Montpelier	2,984	W. E. Morgan.
Moscow	3,956	Philip H. Soulen.
Nampa	7,621	W. F. Weisend.
Pocatello	15,001	Walter R. Siders.
Preston	3,235	John W. Condie.
Rexburg	3,569	Willis A. Smith.
St. Anthony	2,957	J. F. Lewis.
Sandpoint	2,876	J. L. Breckenridge.
Twin Falls	8,324	M. C. Mitchell.
Wallace	2,816	C. D. Brock.
Weiser	3,154	D. C. Neifert.
ILLINOIS.		
Abingdon	2,721	S. E. Le Marr.
Alton	24,682	W. R. Curtis.
Anna	3,019	E. E. McLaughlin.
Auburn	2,660	H. S. Mengel.
Aurora: East side / West side	36,397	C. M. Bardwell. / H. T. McKinney.
Averyville (P. O., Peoria).	3,815	Harry E. Iler.
Batavia	4,395	H. C. Storm.
Beardstown	7,111	H. G. Russell.
Belleville	24,823	A. L. Odenweller.
Belvidere	7,804	J. H. Smith.
ILLINOIS—contd.		
Benld	3,316	W. E. Rutherford.
Benton	7,201	G. S. Wooters.
Berwyn	14,150	E. A. Wilson.
Bloomington	28,725	S. K. McDowell.
Blue Island	11,424	J. E. Lemon.
Brookfield	3,589	E. N. Cassady.
Bushnell	2,716	T. W. Everitt.
Cairo	15,203	T. C. Clendenen.
Canton	10,928	G. W. Gayler.
Carbondale	6,267	J. Wray Henry.
Carlinville	5,212	H. J. Blue.
Carmi	2,667	Mrs. Maude Chalfant.
Carterville	3,404	S. J. Dixon.
Centralia	12,491	Roy Vail Jordan.
Champaign	15,873	W. W. Earnest.
Charleston	6,615	Earl W. Anderson.
Chester	2,904	Charles O. Todd.
Chicago	2,701,705	Peter A. Mortenson.
Chicago Heights	19,653	Floyd T. Goodier.
Christopher	3,830	E. F. Grizzell.
Cicero	44,995	W. W. Lewton.
Clinton	5,898	Henry H. Edmunds.
Collinsville	9,753	C. H. Dorris.
Danville	33,776	Gilbert P. Randle.
Decatur	43,818	John J. Richeson.
De Kalb	7,871	F. R. Ritzman.
Depue	2,525	D. G. Calvert.
Des Plaines	3,451	Edwin D. Mac Luckie.
Dixon	8,191	I. B. Potter.
Downers Grove	3,543	J. F. Reed.
Dundee	4,735	Osher Schlaifer.
Duquoin	7,285	Joe Strickler.
East Moline	8,675	D. B. Hoffman.
East St. Louis	66,767	D. Walter Potts.
Edwardsville	5,336	C. F. Ford.
Effingham	4,024	J. F. Grisamore.
Eldorado	5,004	John W. Allen.
Elgin	27,454	Robert I. White.
Elmhurst	4,594	Lydia Vautsmier.
Evanston: District No. 75. / District No. 76.	37,234	Ernest A. Smith. / F. W. Nichols.
Fairbury	2,532	E. W. Powers.
Fairfield	2,754	H. D. Willone. / Herschel Whittaker.
Farmington	2,631	E. A. Huff.
Flora	3,558	G. O. Lewis.
Forest Park	10,768	Henry D. Bedford.
Frankfort Heights	3,423	C. E. Lannom.
Freeport	19,669	S. E. Raines.
Galena	4,742	Mrs. Myrtle R. Heer.
Galesburg	23,834	T. W. Callihan.
Galva	2,974	F. U. White.
Geneseo	3,375	J. M. Edman.
Geneva	2,803	H. M. Coultrap.
Georgetown	3,061	Bertram Rees.
Gillespie	4,063	L. E. Wilhite.
Glencoe	3,381	Arthur B. Rowell.
Glen Ellyn	2,851	J. Grove Butler.
Granite City	14,757	L. P. Frohardt.
Greenville	3,091	Alex Long.
Harrisburg	7,125	T. O. Elliott.
Harvard	3,294	Chas. O. Haskell.
Harvey	9,216	F. L. Miller.
Havana	3,614	David A. Aldstadt.
Herrin	10,986	John R. Creek.
Highland	2,902	C. L. Dietz.
Highland Park: District No. 107. / District No. 108.	6,167	Jesse L. Smith. / Clark G. Wright.
Hillsboro	5,074	H. J. Beckemeyer.
Hinsdale	4,042	A. F. Cook.
Hoopeston	5,451	W. R. Lowery.
Jacksonville	15,713	H. A. Perrin.
Jerseyville	3,839	J. A. Egelhoff.
Johnston City	7,137	Nat Boomer.

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IV.—SUPERINTENDENTS OF PUBLIC SCHOOLS IN CITIES AND TOWNS—Continued.

City.	Population, census of 1920.	Superintendent or supervising principal.
ILLINOIS—contd.		
Joliet	38,442	J. O. Engleman.
Kankakee	16,753	A. P. Johnson.
Kewanee	16,026	Charles Bruner.
La Grange	6,525	Almor S. Anderson.
Lake Forest	3,657	John E. Baggett.
La Salle	13,050	J. B. McManus.
Lawrenceville	5,080	Marion Moore.
Lincoln	11,882	D. F. Nickols.
Litchfield	6,215	Louise Bockewitz.
Lockport	2,684	T. B. Walling.
Lyons	2,564	John W. Costello.
Macomb	6,714	Ernest Iler.
Madison	4,996	Henry S. Stice.
Marion	9,582	C. J. Ramsay.
Marseilles	3,391	C. V. McAlpine.
Mattoon	13,552	H. B. Black.
Maywood	12,072	Eugene La Rowe.
Melrose Park	7,147	
Mendota	3,934	R. E. Beebe.
Metropolis	5,055	C. A. McGinnis.
Moline	30,734	Lewis A. Mahoney.
Monmouth	8,116	L. L. Caldwell.
Morris	4,505	K. C. Merrick.
Morrison	3,000	William E. Weaver.
Mound City	2,756	M. C. Hunt.
Mounds	2,661	John H. Bower.
Mount Carmel	7,456	E. W. Martin.
Mount Olive	3,503	J. Orin Powers.
Mount Vernon	9,815	J. B. Hendricks.
Murphysboro	10,703	S. J. Shomaker.
Naperville	3,830	O. A. Waterman.
Nokomis	3,465	C. W. Conrad.
Normal	5,143	Chester F. Miller.
North Chicago	5,839	F. E. Deyoe.
Oak Park	39,858	W. J. Hamilton.
Oglesby	4,135	N. M. Mason.
Olney	4,491	H. W. Hostettler.
Ottawa	10,816	C. J. Byrne.
Pana	6,122	J. L. Hart.
Paris	7,985	H. M. Hinkle.
Park Ridge	3,383	Sanford E. Merrill.
Paxton	3,033	O. J. Balnum.
Pekin	12,086	R. Y. Allison (high school). Robert C. Smith (grades).
Peoria	76,121	A. W. Beasley.
Peru	8,869	A. H. Karn.
Pinckneyville	2,649	S. J. Harry Wilson (high school). R. R. Pyatt (grades).
Pontiac	6,664	G. J. Koons.
Princeton	4,126	C. B. Smith.
Quincy	35,978	Chas. M. Gill.
River Forest (P. O., Oak Park).	4,358	
Riverside	2,532	A. F. Ames.
Robinson	3,375	Harry E. Green.
Rochelle	3,310	O. N. Wing.
Rock Falls	2,927	Mary E. Canode.
Rockford	65,651	E. E. Lewis.
Rock Island	35,177	E. C. Fisher.
Roodhouse	2,928	G. K. Hutcherson.
St. Charles	4,099	G. E. Thomasson.
Salem	3,457	N. E. Jaycox.
Savanna	5,237	C. H. Leavitt.
Sesser	2,841	R. Everett Carlton.
Shelbyville	3,568	R. C. Sayre.
Silvis	2,541	Paul G. Silas.
Sparta	3,340	Lawrence D. Watson
Springfield	59,183	I. M. Allen.
Springvalley	6,493	Clifford L. Sarver.
Staunton	6,027	Wm. E. Eccles.
Sterling: District No. 10 / District No. 11	8,182	A. L. Hill. / Clarence Selby.
Streator	14,779	H. B. Fisher.
Sullivan	2,532	O. B. Lowe.
Summit	4,019	D. L. O'Sullivan.
Sycamore	3,602	O. E. Peterson.
Taylorville	5,806	Edgar S. Jones.
Toluca	2,503	T. F. McLamarrah.
Tuscola	2,564	H. H. Kirkpatrick.
Urbana	10,244	William Harris.
Vandalia	3,316	Harry E. Slusser.
Venice	3,895	S. J. McComis.
Virden	4,682	G. C. Mayhew.
Watseka	2,817	V. I. Brown.
Waukegan	19,226	John S. Clark.
West Chicago	2,504	H. E. McKellar.
West Frankfort	8,478	C. A. Waller.
West Hammond (P. O., Hammond, Ind.).	7,492	Otis W. Glamore.
Westville	4,241	
Wheaton	4,137	J. B. Russell.
Whitehall	2,954	Clyde Slone.
Wilmette	7,814	J. R. Harper.
Winnetka	6,694	C. W. Washburne.
Wood River	3,476	G. A. Smith.
Woodstock	5,523	Richard W. Bardwell.
Zion	5,580	Joseph L. Bishop.
INDIANA.		
Alexandria	4,172	F. W. Stoler.
Anderson	29,767	W. A. Denny.
Angola	2,650	H. B. Allman.
Attica	3,392	W. F. Mullinnix.
Auburn	4,650	G. W. Youngblood.
Aurora	4,299	J. R. Houston.
Bedford	9,076	E. W. Montgomery.
Bicknell	7,635	I. D. Reedy.
Bloomington	11,595	E. E. Ramsey.
Bluffton	5,391	P. A. Allen.
Boonville	4,451	William F. Vogel.
Brazil	9,293	Chas. P. Keller.
Clinton	10,962	Geo. W. McReynolds.
Columbia City	3,499	Mary E. Hallowell.
Columbus	8,990	Donald Du Shane.
Connersville	9,901	Edwin C. Dodson.
Crawfordsville	10,139	Anna Willson.
Crown Point	3,232	J. M. Geiser.
Decatur	4,762	M. F. Worthman.
Dunkirk	2,532	R. D. Shaffer.
East Chicago	35,967	Edwin N. Canine.
Elkhart	24,277	J. F. Wiley.
Elwood	10,790	Arthur W. Konold.
Evansville	85,264	L. P. Benezet.
Fort Wayne	86,549	L. C. Ward.
Frankfort	11,585	W. R. Hough.
Franklin	4,909	J. C. Webb.
Garrett	4,796	George C. Carroll.
Gary	55,378	William Wirt.
Gas City	2,870	N. J. Lasher.
Goshen	9,525	J. W. Foreman.
Greencastle	3,780	B. W. Kelly.
Greenfield	4,168	Z. M. Smith.
Greensburg	5,345	Elmer C. Jerman.
Hammond	36,004	Edwin S. Monroe.
Hartford City	6,183	A. L. Frantz.
Hobart	3,450	A. E. Condon.
Huntingburg	3,261	Henry W. A. Hemmer.
Huntington	14,000	J. M. Scudder.
Indianapolis	314,194	E. U. Graff.
Jasonville	4,461	E. A. O'Dell.
Jasper	2,539	Margaret A. Wilson.
Jeffersonville	10,098	E. G. McCullum.
Kendallville	5,273	

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IV.—Superintendents of Public Schools in Cities and Towns—Continued.

City.	Population, census of 1920.	Superintendent or supervising principal.
INDIANA—contd.		
Kokomo	30,067	C. V. Haworth.
La Fayette	22,486	D. W. Horton.
Laporte	15,158	A. L. Trester.
Lawrenceburg	3,466	Jesse W. Riddle.
Lebanon	6,257	Paul Van Riper.
Linton	5,856	Slater Bartlow, jr.
Logansport	21,626	James W. Wilkinson.
Madison	6,711	E. O. Muncie.
Marion	23,747	A. E. Highley.
Martinsville	4,895	Marion S. Mahan.
Michigan City	19,457	L. W. Keeler.
Mishawaka	15,195	P. C. Emmons.
Mitchell	3,025	J. H. Shipp.
Monticello	2,536	Harry E. Elder.
Mount Vernon	5,284	W. S. Painter.
Muncie	36,524	T. F. Fitzgibbon.
Nappanee	2,678	F. E. Young.
New Albany	22,992	H. A. Buerk.
Newcastle	14,458	E. J. Llewelyn.
Noblesville	4,758	W. A. Stockinger.
North Manchester	2,711	Homer F. Humke.
North Vernon	3,084	C. E. Sandefur.
Peru	12,410	E. J. Black.
Plymouth	4,338	C. R. Stallings.
Portland	5,958	Grant E. Derbyshire.
Princeton	7,132	J. W. Stott.
Rensselaer	2,912	C. R. Dean.
Richmond	26,765	W. G. Bate.
Rochester	3,720	A. L. Whitmer.
Rockport	2,581	J. H. Diehl.
Rushville	5,498	J. H. Scholl.
Salem	2,836	N. F. Hutchison.
Seymour	7,348	T. A. Mott.
Shelbyville	9,701	J. W. Holton.
South Bend	70,983	W. W. Borden.
Sullivan	4,489	A. W. Youngblood.
Tell City	4,086	C. Newman.
Terre Haute	66,083	James M. Tilley.
Tipton	4,507	C. E. Spaulding.
Union City	3,406	Roy P. Wisehart.
Valparaiso	6,518	C. W. Boucher.
Vincennes	17,160	Edgar N. Haskins.
Wabash	9,872	Owen J. Neighbours.
Warsaw	5,478	James M. Leffel.
Washington	8,743	R. N. Tirey.
West Lafayette	3,830	F. A. Burtsfield.
West Terre Haute	4,310	T. V. Pruitt.
Whiting	10,145	J. H. Hoskinson.
Winchester	4,021	Oscar R. Baker.
IOWA.		
Albia	5,067	G. H. Brinegar.
Algona	3,724	J. F. Overmyer.
Ames	6,270	E. J. Bodwell.
Anamosa	2,881	H. M. Stiles.
Atlantic	5,329	E. H. Bosshard.
Belle Plaine	3,887	James R. McVicker.
Boone	12,451	G. S. Wooten.
Burlington	24,057	E. M. Sipple.
Carroll	4,254	E. J. Housh.
Cedar Falls	6,316	F. L. Mahannah.
Cedar Rapids	45,566	Arthur Deamer.
Centerville	8,486	H. M. Taylor.
Chariton	5,175	J. R. Cougill.
Charles City	7,350	Claude F. Brown.
Cherokee	5,824	Lester C. Ary.
Clarinda	4,511	E. L. Weaver.
Clarion	2,826	Chas. E. Pratt.
Clear Lake	2,804	C. H. Ream.
Clinton	24,151	Frank W. Hicks.
Colfax	2,504	D. M. Kelly.
Council Bluffs	36,162	Theodore Saam.
Cresco	3,195	A. R. Tiffany.
Creston	8,034	Arthur W. Crane.
IOWA—continued.		
Davenport	56,727	Frank L. Smart.
Decorah	4,039	C. C. Gamertsfelder.
Denison	3,581	C. E. Humphrey.
Des Moines	126,468	J. W. Studebaker.
Dubuque	39,141	O. P. Flower.
Eaglegrove	4,433	W. H. Fasold.
Eldora	3,189	Will A. Pye.
Emmetsburg	2,762	C. I. Buly.
Estherville	4,699	F. H. Sunderlin.
Fairfield	5,948	C. F. Garrett.
Fort Dodge	19,347	L. H. Minkel.
Fort Madison	12,066	A. I. Tiss.
Glenwood	3,862	B. K. Orr.
Grinnell	5,362	Eugene Henely.
Hampton	2,992	H. L. Cecil.
Harlan	2,831	Mary J. Wyland.
Independence	3,672	Thos. R. Roberts.
Indianola	3,628	O. E. Smith.
Iowa City	11,267	I. A. Opstad.
Iowa Falls	3,954	O. S. Von Krog.
Jefferson	3,416	T. B. Stewart.
Keokuk	14,423	R. L. Reid.
Knoxville	3,523	N. H. Ringstrom.
Le Mars	4,683	Ray Latham.
Manchester	3,111	J. S. Hilliard.
Maquoketa	3,626	B. S. Moyle.
Marion	4,138	Paul Cutler.
Marshalltown	15,731	Wm. F. Shirley.
Mason City	20,065	Frank T. Vasey.
Missouri Valley	3,985	Lorne F. Smylie.
Mount Pleasant	3,987	C. W. Cruikshank.
Muscatine	16,068	Samuel A. Potts.
Mystic	2,796	Chas. C. Foley.
Nevada	2,668	T. B. Warren.
New Hampton	2,539	P. C. Lapham.
Newton	6,627	Grover H. Alderman.
Oelwein	7,455	A. W. Moore.
Osage	2,878	Geo. H. Sawyer.
Osceola	2,684	Daniel B. Heller.
Oskaloosa	9,427	J. I. Lynch.
Ottumwa	23,003	H. E. Blackmar.
Pella	3,338	F. M. Frush.
Perry	5,642	Henry W. Chehock.
Red Oak	5,578	J. R. Inman.
Sac City	2,630	Sebastian Lake.
Sheldon	3,488	F. H. Chandler.
Shenandoah	5,255	E. B. Dehell.
Sioux City	71,227	Melvin G. Clark.
Spencer	4,599	J. R. McAnelly.
Storm Lake	3,658	Walter D. Cocking.
Tama	2,601	A. R. Finley.
Valley Junction	3,631	C. B. Hightower.
Vinton	3,381	K. D. Miller.
Washington	4,697	W. C. Harding.
Waterloo:		
East side	36,230	Chas. W. Kline.
West side		H. D. Lee.
Waverly	3,352	T. M. Clevenger.
Webster City	5,657	E. R. Sifert.
Winterset	2,906	Maurice R. Hassel.
KANSAS.		
Abilene	4,895	W. A. Stacey.
Anthony	2,740	O. H. Werner.
Arkansas City	11,253	C. E. St. John.
Atchison	12,630	H. P. Study.
Augusta	4,219	G. H. Marshall.
Baxter Springs	3,608	S. B. Apple.
Beloit	3,315	W. O. Steen.
Caney	3,427	A. M. Herron.
Chanute	10,286	J. F. Hughes.
Cherryvale	4,698	[illegible]
Clay Center	3,715	[illegible]
Coffeyville	13,452	[illegible]

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IV.—Superintendents of Public Schools in Cities and Towns—Continued.

City.	Population, census of 1920.	Superintendent or supervising principal.
KANSAS—contd.		
Columbus	3,155	M. S. Catlett.
Concordia	4,705	W. E. Sheffer.
Council Grove	2,857	J. J. Haney.
Dodge City	5,061	R. E. Long.
Eldorado	10,995	J. W. Murphy.
Emporia	11,273	L. A. Lowther.
Eureka	2,606	C. U. Phillips.
Fort Scott	10,693	M. h. Rose.
Fredonia	3,954	E. A. Elliott.
Frontenac	3,225	Frank E. Alsup.
Galena	4,712	M. D. Thudium.
Garden City	3,848	C. I. Vinsonhaler.
Girard	3,161	T. E. Osborn.
Goodland	2,664	J. R. Reed.
Great Bend	4,460	Chas. F. Grabske.
Hays	3,165	Charles A. Shively.
Herington	4,065	E. E. Mitchell.
Hiawatha	3,222	A. K. Loomis.
Holton	2,703	Neal M. Wherry.
Horton	4,009	Fred M. Thompson.
Humboldt	2,525	T. A. Edgerton.
Hutchinson	23,298	J. O. Hall.
Independence	11,920	C. S. Risdon.
Iola	8,513	Chas. A. Wagner.
Junction City	7,533	J. H. Clement.
Kansas City	101,177	M. E. Pearson.
Larned	3,139	R. V. Phinney.
Lawrence	12,456	Harry P. Smith.
Leavenworth	16,912	Ira J. Bright.
Liberal	3,613	Andrew B. Steele.
Lyons	2,516	J. J. Yoder.
McPherson	4,595	R. W. Potwin.
Manhattan	7,989	E. B. Gift.
Marysville	3,048	C. O. Smith.
Mulberry	2,697	J. C. Butler.
Neodesha	3,943	V. M. Liston.
Newton	9,781	B. F. Martin.
Olathe	3,268	E. N. Hill.
Osawatomie	4,772	C. A. Axton.
Ottawa	9,018	A. F. Senter.
Paola	3,238	O. C. Graber.
Parsons	16,028	H. D. Ramsey.
Pittsburg	18,052	John F. Bender.
Pratt	5,183	W. A. Wood.
Rosedale	7,674	Armon P. Vaughn.
Salina	15,085	W. S. Heusner.
Topeka	50,022	A. J. Stout.
Wellington	7,048	A. D. Catlin.
Wichita	72,217	L. W. Mayberry.
Winfield	7,933	J. W. Gowans.
KENTUCKY.		
Ashland	14,729	J. W. Bradner.
Bellevue (P. O., Newport).	7,379	Vaught Mills.
Bowling Green	9,638	T. C. Cherry.
Catlettsburg	4,183	W. M. Wilson.
Central City	3,108	W. C. Bell.
Corbin	3,406	Wm. Richie.
Covington	57,121	Harry S. Cox.
Cynthiana	3,857	William E. Selin.
Danville	5,099	L. C. Bosley.
Dayton	7,646	R. H. Brown.
Earlington	3,652	J. Arthur Mitchell.
Elizabethtown	2,530	John C. Pirtle.
Fort Thomas	5,028	C. R. Rounds.
Frankfort	9,805	J. W. Ireland.
Franklin	3,154	D. H. Lyon.
Fulton	3,415	V. L. Broyles.
Georgetown	3,903	L. G. Wesley.
Glasgow	2,559	E. B. Terry.
Harlan	2,647	W. D. Jones.
Harrodsburg	3,765	A. K. McKemie.
Hazard	4,348	P. H. Neblett.
Henderson	12,169	C. E. Dudley.
Hickman	2,633	J. M. Calvin.
KENTUCKY—con.		
Highland Park	3,979	T. B. Sporing.
Hopkinsville	9,606	J. C. Waller.
Irvine	2,705	J. P. W. Brouse.
Jenkins	4,707	Leon B. Stephan.
Lebanon	3,239	J. R. Sterrett.
Lexington	41,534	M. A. Cassidy.
Louisville	234,891	Zenos E. Scott.
Ludlow	4,582	W. D. Reynolds.
Madisonville	5,030	Harper Gatton.
Mayfield	6,583	D. W. Bridges.
Maysville	6,107	W. J. Caplinger.
Middlesboro	8,041	J. W. Runcie.
Morganfield	2,651	R. T. Whittinghill.
Mount Sterling	3,995	H. A. Babb.
Newport	29,317	E. F. Sporing.
Nicholasville	2,786	H. L. Smith.
Oakdale	3,198	
Owensboro	17,424	J. L. Foust.
Paducah	24,735	Ralph Yakel.
Paris	6,310	Lee Kirkpatrick.
Pineville	2,908	R. H. Shipp.
Princeton	3,689	I. J. Mars.
Providence	4,151	Jay F. Chambers.
Richmond	5,622	John H. Payne.
Russellville	3,124	C. T. Canon.
Shelbyville	3,760	Mark Todman.
Somerset	4,672	R. E. Hill.
Winchester	8,333	Clarence E. Ackley.
LOUISIANA.		
Abbeville	3,461	J. H. Williams.
Alexandria	17,510	W. J. Avery.
Baton Rouge	21,782	P. H. Griffith.
Bogalusa	8,245	F. C. Ratliff.
Covington	2,942	A. J. Park.
Crowley	6,108	J. R. De Moss.
De Ridder	3,535	H. A. Buie.
Donaldsonville	3,745	B. C. Alwes.
Eunice	3,272	A. A. Sibley.
Franklin	3,504	A. B. Murray.
Gretna	7,197	J. C. Ellis.
Hammond	3,855	W. J. Dunn.
Homer	3,305	P. C. Rogers, jr.
Houma	5,160	H. L. Bourgeois.
Jeanerette	2,512	W. L. Colvin.
Jennings	3,824	W. D. Boitnott.
Kentwood	3,059	J. A. Arnett.
La Fayette	7,855	T. C. Wiggins.
Lake Charles	13,088	Ward Anderson.
Leesville	2,518	A. H. Nanney.
Mansfield	2,564	J. Luther Jordan.
Merryville	2,963	Edward J. Brown.
Minden	6,105	E. S. Richardson.
Monroe	12,675	E. L. Neville.
Morgan City	5,429	Joe Farrar.
Natchitoches	3,388	M. C. Taylor.
New Iberia	6,278	L. G. Porter.
New Orleans	387,219	J. M. Gwinn.
Oakdale	4,016	Bertram W. Maxwell.
Opelousas	4,437	Paul D. Pavy.
Patterson	2,538	E. A. Crowell.
Plaquemine	4,632	Harry De La Rue.
Rayne	2,720	L. V. Pourciau.
Ruston	3,389	H. E. Townsend.
Shreveport	43,874	C. E. Byrd.
Slidell	2,958	T. H. McAfee.
Thibodaux	3,526	W. S. Lafargue.
Winnfield	2,975	A. Leonard Allen.
MAINE.		
Anson	2,593	Mrs. L. A. Bradbury, North Anson.
Auburn	16,985	H. H. Randall.
Augusta	14,114	Herman H. Stuart.

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IV.—Superintendents of Public Schools in Cities and Towns—Continued.

City.	Population, census of 1920.	Superintendent or supervising principal.
MAINE—contd.		
Bangor	25,978	T. C. Morrill.
Bar Harbor	3,622	Frank McGouldrick.
Bath	14,731	C. L. Smith.
Belfast	5,083	Edward E. Roderick.
Biddeford	18,008	C. A. Weed.
Brewer	6,064	F. W. Burrill.
Bridgton	2,546	Guy M. Monk.
Brunswick	7,261	John A. Cone.
Calais	6,084	W. H. Phinney.
Camden	3,403	George E. Paine.
Caribou	6,018	C. A. Grant.
Dexter	4,113	James A. Hamlin.
East Livermore (P. O., Livermore Falls).	2,636	E. R. Bowdoin.
Eastport	4,494	Mrs. Eunice M. Beale.
Ellsworth	3,058	Hermon E. Henry.
Fairfield	4,253	Merlin C. Joy.
Farmington	3,197	Wm. C. Webster.
Fort Fairfield	4,551	C. E. Glover.
Fort Kent	4,237	Catherine Ouellette.
Gardiner	5,475	Leon W. Gerrish.
Gorham	2,870	Richard J. Libby.
Hallowell	2,764	W. F. Packard.
Houlton	6,191	Thomas P. Packard
Jay	3,152	H. R. Houston.
Kennebunk	3,138	Merton T. Goodrich.
Kittery	4,763	E. S. Foster.
Lewiston	31,791	C. W. Bickford.
Lisbon (P. O., Lisbon Falls).	4,091	A. R. Carter.
Lubec	3,371	E. S. Higgins.
Madison	3,700	William B. Woodbury.
Mexico	3,242	Russel I. Morgrage.
Millinocket	4,528	W. M. Marr.
Milo	2,894	W. H. Sturtevant.
Norway	2,969	William E. Stuart.
Oldtown	6,956	W. O. Chase.
Orono	3,133	
Paris	3,656	A. B. Garcelon.
Pittsfield	2,700	T. W. McQuaide.
Portland	69,272	William D. Fuller.
Presque Isle	5,581	H. E. Rollins.
Rockland	8,109	Harry C. Hull.
Rumford	8,576	L. E. Williams.
Saco	6,817	T. T. Young.
Sanford	10,691	B. E. Packard.
Skowhegan	5,981	Wm. B. Woodbury.
South Berwick	2,955	William G. McCue, Berwick.
South Portland	9,254	S. M. Hamlin.
Vanburen	4,594	C. L. O'Connell.
Waterville	13,351	W. H. Patten.
Westbrook	9,453	(See Gorham.)
Wilton	2,505	(See Jay.)
Winslow	3,280	E. L. Toner.
York (P. O., York village).	2,727	(See Kittery.)
MARYLAND.[1]		
Annapolis	11,214	George Fox.
Baltimore	733,826	Henry S. West.
Brunswick	3,905	(See Frederick.)
Cambridge	7,467	J. B. Noble.
Chestertown	2,537	Edw. J. Clarke.
Crisfield	4,116	Wm. H. Dashiell.
Cumberland	29,837	Edward F. Webb.
Easton	3,442	Oscar M. Fogle.
Elkton	2,660	Hugh W. Caldwell.
Frederick	11,066	G. Lloyd Palmer.
Frostburg	6,017	(See Cumberland.)
Hagerstown	28,064	B. J. Grimes.
Havre de Grace	4,377	C. Milton Wright.
Hyattsville	2,675	Nicholas Orem.
MARYLAND—con.		
Salisbury	7,553	James M. Bennett.
Westernport	3,977	(See Cumberland.)
Westminster	3,521	M. S. H. Unger.
MASSACHUSETTS.		
Abington	5,787	C. A. Record.
Acushnet	3,075	(See Fairhaven.)
Adams	12,967	Francis A. Bagnall.
Agawam	5,023	(See Ludlow.)
Amesbury	10,036	Justin O. Wellman.
Amherst	5,550	Jason O. Cook.
Andover	8,268	Henry C. Sanborn.
Arlington	18,665	G. C. Minard.
Athol	9,792	W. Scott Ward.
Attleboro	19,731	Lewis A. Fales.
Auburn	3,891	Henry H. Pratt.
Ayer	3,052	Frank C. Johnson.
Barnstable	4,836	Geo. H. Galger.
Barre	3,357	M. A. Sturtevant.
Belmont	10,749	George P. Armstrong.
Beverly	22,561	S. Howard Chace.
Billerica	3,646	Eugene C. Vining.
Blackstone	4,299	Leon E. Davis.
Boston	748,060	J. E. Burke.
Bourne	2,530	Herbert L. Whitman.
Braintree	10,580	Clarence N. Flood.
Bridgewater	8,438	Clifton C. Putney.
Brockton	66,254	John F. Scully.
Brookline	37,748	Oscar C. Gallagher.
Cambridge	109,694	M. E. Fitzgerald.
Canton	5,945	Edgar L. Willard.
Chelmsford	5,682	Roscoe G. Frame.
Chelsea	43,184	Frank E. Parlin.
Chicopee	36,214	John J. Desmond, jr.
Clinton	12,979	Thomas F. Gibbons.
Cohasset	2,639	Orvis K. Collins.
Concord	6,461	Wells A. Hall.
Dalton	3,752	Herbert L. Allen.
Danvers	11,108	Harrie J. Phipps.
Dartmouth	6,493	Frederick L. Kendall, South Dartmouth.
Dedham	10,792	Roderick W. Hine.
Deerfield	2,803	Andrew S. Thomson, South Deerfield.
Dighton	2,574	Walter K. Putney, North Dighton.
Dracut	5,280	Charles L. Randall.
Dudley	3,701	Wm. F. Sims.
East Bridgewater	3,486	Edgar H. Grout.
Easthampton	11,261	W. D. Miller.
Easton	5,041	Carlon E. Wheeler, North Easton.
Everett	40,120	Fairfield Whitney.
Fairhaven	7,291	Charles F. Prior.
Fall River	120,485	Hector L. Belisle.
Falmouth	3,500	Carl Holman.
Fitchburg	41,029	Ernest W. Robinson.
Foxboro	4,136	Ira A. Jenkins.
Framingham	17,033	Ernest W. Fellows.
Franklin	6,497	Arthur W. Hale.
Gardner	16,971	Fordyce T. Reynolds.
Gloucester	22,947	Ernest W. Fellows.
Grafton	6,887	Albert S. Cole.
Great Barrington	6,315	Russell H. Bellows.
Greenfield	15,462	Winthrop P. Abbott.
Groveland	2,650	G. E. Caswell, Georgetown.
Hadley	2,784	Clinton J. Richards, Northampton.
Hanover	2,575	Stephen G. Bean.
Hardwick	3,085	(See Barre.)

[1] County superintendents have control of city schools.

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IV.—SUPERINTENDENTS OF PUBLIC SCHOOLS IN CITIES AND TOWNS—Continued.

City.	Population, census of 1920.	Superintendent or supervising principal.
MASSACHUSETTS—continued.		
Harvard	2,546	George B. Clarke, East Pepperell.
Hatfield	2,651	(See Hadley.)
Haverhill	53,884	Albert L. Barbour.
Hingham	5,604	(See Cohasset.)
Holbrook	3,161	Adolph O. Christiansen.
Holden	2,970	J. R. Childs.
Holliston	2,707	C. Edward Fisher.
Holyoke	60,203	William R. Peck.
Hopedale	2,777	Carroll H. Drown.
Hudson	7,607	Bertram D. Brown.
Ipswich	6,201	Joseph I. Horton.
Kingston	2,505	Mrs. Julia Morton.
Lawrence	91,270	Bernard M. Sheridan.
Lee	4,085	Clarence E. Michels.
Leicester	3,635	Theodore W. King.
Lenox	2,691	Thomas F. Kane.
Leominster	19,711	William H. Perry.
Lexington	6,350	Harry H. Lowry.
Longmeadow (P. O., East Longmeadow).	2,618	Frederic A. Wheeler.
Lowell	112,759	Hugh J. Molloy.
Ludlow	7,470	Walter E. Gushee.
Lynn	99,148	Charles S. Jackson.
Malden	49,103	F. G. Marshall.
Mansfield	6,255	Nelson G. Howard.
Marblehead	7,324	Frank H. Hill.
Marlboro	15,028	Ernest P. Carr.
Maynard	7,086	Wm. H. Millington.
Medfield	3,595	Albert S. Ames.
Medford	39,038	Maro S. Brooks.
Medway	2,956	C. Edward Fisher.
Melrose	18,204	John C. Anthony.
Methuen	15,189	Edwin L. Haynes.
Middleboro	8,453	Charles H. Bates.
Milford	13,471	A. O. Caswell.
Millbury	5,653	C. C. Ferguson.
Milton	9,382	Joseph A. Ewart.
Monson	4,826	Francis S. Brick.
Montague	7,675	James J. Quinn.
Nantucket	2,797	Edwin S. Tirrell.
Natick	10,907	Edgar L. Willard.
Needham	7,012	John C. Davis.
New Bedford	121,217	Allen P. Keith.
Newburyport	15,618	William C. Moore.
Newton	46,054	Ulysses G. Wheeler.
North Adams	22,282	Burr J. Merriam.
Northampton	21,951	Fayette K. Congdon.
North Andover	6,265	Nahum Leonard.
North Attleboro	9,238	George W. Morris.
Northbridge	10,174	F. E. Holt, Whitinsville.
North Brookfield	2,610	Edward C. Hempel.
Norwood	12,627	Herbert H. Howes.
Orange	5,393	Josiah S. McCann.
Oxford	3,820	(See Millbury.)
Palmer	9,896	Clifton H. Hobson.
Peabody	19,552	Albert Robinson.
Pittsfield	41,763	John F. Gannon.
Plymouth	13,045	Charles A. Harris.
Provincetown	4,246	Charles M. Pennell.
Quincy	47,876	Fred H. Nickerson.
Randolph	4,756	(See Holbrook.)
Reading	7,439	A. L. Safford.
Revere	28,823	William C. McGinnis.
Rockland	7,544	Oliver H. Toothaker.
Rockport	3,878	William F. Eldredge.
Salem	42,529	George M. Bemis.
Saugus (P. O., Lynn)	10,874	Jesse W. Lambert.
Scituate	2,534	F. E. Bragdon.
Seekonk	2,898	(See Blackstone.)
Shrewsbury	3,708	C. R. Stacy.
Somerset	3,520	Frederic W. Kingman.
Somerville	93,091	Charles S. Clark.
South Hadley	5,527	F. E. Whittemore.
Southbridge	14,245	Fred E. Corbin.
Spencer	5,930	Irving H. Agard.
Springfield	129,614	James H. Van Sickle.
Stoneham	7,873	Frederick W. Porter.
Stoughton	6,865	L. W. Robbins.
Sutton (P. O., Auburn).	2,578	Henry H. Pratt.
Swampscott	8,101	Harold F. Dow.
Taunton	37,137	C. G. Persons.
Templeton	4,019	Asa M. Jones.
Tewksbury	4,450	(See Dracut.)
Uxbridge	5,384	C. L. Judkins.
Wakefield	13,025	Willard B. Atwell.
Walpole	5,446	Ralph W. Westcott.
Waltham	30,915	Charles N. Perkins.
Ware	8,525	Joseph J. Reilly.
Wareham	4,415	Horace F. Turner.
Warren	3,467	Hermann G. Patt.
Watertown	21,457	Wilfred H. Price.
Webster	13,258	William H. Sims.
Wellesley	6,224	S. Monroe Graves.
West Bridgewater	2,908	Thomas E. Gay.
Westboro	5,789	Thomas S. Grindle.
Westfield	18,604	Chester D. Stiles.
Westford	3,170	Herman C. Knight.
Westport	3,115	Edward L. Hill.
West Springfield	13,443	Norman J. Bond.
Weymouth	15,057	Parker T. Pearson.
Whitman	7,147	Elwood T. Wyman.
Wilbraham	2,780	(See Long Meadow.)
Williamstown	3,707	Albert J. Chidester.
Wilmington	2,581	Ralph R. Barr.
Winchendon	5,904	Austin R. Paull.
Winchester	10,485	John R. Fausey.
Winthrop	15,455	F. A. Douglas.
Woburn	16,574	George I. Clapp.
Worcester	179,754	Harvey S. Gruver.
Wrentham	2,808	(See Franklin.)
MICHIGAN.		
Adrian	11,878	C. H. Griffey.
Albion	8,354	Don Harrington.
Allegan	3,637	Arthur R. Shigley.
Alma	7,542	J. W. Kelder.
Alpena	11,101	George H. Curtis.
Ann Arbor	19,516	L. A. Butler.
Battle Creek	36,164	W. G. Coburn.
Bay City	47,554	Frank A. Gause.
Belding	3,911	S. J. Skinner.
Benton Harbor	12,233	Frank A. Jensen.
Bessemer	5,482	C. R. Cobb.
Big Rapids	4,558	D. A. Van Buskirk.
Birmingham	3,394	Clarence Vliet.
Boyne City	4,284	A. A. Metcalf.
Buchanan	3,187	B. F. Eggert.
Cadillac	9,750	Chas. W. Crandell.
Calumet	22,369	Edward J. Hall.
Caro	2,704	F. E. Schall.
Charlotte	5,126	C. H. Carrick.
Cheboygan	5,842	Carl Titus.
Coldwater	6,114	Ira F. King.
Crystal Falls	3,394	W. D. Hill.
Detroit	993,678	Frank Cody.
Dowagiac	5,440	L. W. Stewart.
Durand	2,672	Wm. S. Goudy.
Ecorse	4,394	C. J. Miller.
Escanaba	13,103	W. E. Olds.
Fenton	2,507	J. A. Dalrymple.
Ferndale	2,640	W. E. Harris.
Flint	91,599	A. N. Cody.

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IV.—Superintendents of Public Schools in Cities and Towns—Continued.

City.	Population, census of 1920.	Superintendent or supervising principal.
MICHIGAN—contd.		
Ford (P. O., Wyandotte).	4,294	C. F. Pike.
Gladstone	4,953	C. H. Teague.
Grand Haven	7,205	L. H. von den Berg.
Grand Ledge	3,043	Jonas Sawdon.
Grand Rapids	137,634	William A. Greeson.
Greenville	4,304	W. R. Booker.
Hamtramck	48,615	E. G. Van Deventer.
Hancock	7,527	Henry A. Gilruth.
Hastings	5,132	M. R. Keyworth.
Highland Park	46,499	Thad J. Knapp.
Hillsdale	5,476	S. J. Gier.
Holland	12,183	E. E. Fell.
Houghton	4,466	A. O. Goodale.
Howell	2,951	C. Courter.
Ionia	6,935	A. A. Rather.
Iron Mountain	8,251	M. B. Travis.
Iron River	4,295	William D. Byrns.
Ironwood	15,739	D. F. Rice.
Ishpeming	10,500	C. L. Phelps.
Jackson	48,374	E. O. Marsh.
Kalamazoo	48,487	E. H. Drake.
Lansing	57,327	J. W. Sexton.
Lapeer	4,723	E. E. Irwin.
Ludington	8,810	H. E. Waits.
Manistee	9,694	Benj. Klager.
Manistique	6,380	T. W. Clemo.
Marine City	3,731	H. B. Thompson.
Marquette	12,718	W. M. Whitman.
Marshall	4,270	F. E. King.
Menominee	8,907	John L. Silvernale.
Midland	5,483	J. J. Schafer.
Monroe	11,573	Dean S. Spencer.
Mount Clemens	9,488	L. W. Fast.
Mount Pleasant	4,819	G. E. Ganiard.
Munising	5,087	A. M. Walsworth.
Muskegon	36,570	M. W. Longman
Muskegon Heights	9,514	Leon L. Tyler.
Negaunee	7,419	E. D. Denison.
Niles	7,311	O. W. Haisley.
Norway	4,533	G. L. Greenawalt.
Onaway	2,789	R. E. Simms.
Otsego	3,168	Chas. R. Johnson.
Owosso	12,575	E. J. Willman.
Petoskey	5,064	P. G. Lantz.
Plymouth	2,857	George R. Smith.
Pontiac	34,273	James H. Harris.
Port Huron	25,944	H. A. Davis.
River Rouge	9,822	A. McDonald.
Rochester	2,549	W. E. Parker.
Royal Oak	6,007	Frank Hendry.
Saginaw: East Side / West Side	61,903	W. W. Warner.
St. Clair	3,204	O. M. Misenar.
St. Johns	3,925	F. P. Buck.
St. Joseph	7,251	E. P. Clarke.
St. Louis	3,036	Lloyd S. Gullen.
Sault Ste. Marie	12,098	G. G. Malcolm.
South Haven	3,829	L. C. Mohr.
Sturgis	5,995	C. M. Ferner.
Three Rivers	5,209	Floyd W. Crawford.
Traverse City	10,925	Charles L. Poor.
Wakefield	4,151	Arthur W. Clevenger
Wyandotte	13,851	F. W. Frostic.
Ypsilanti	7,413	A. G. Erickson.
MINNESOTA.		
Albert Lea	8,056	Clark W. Brown.
Alexandria	3,388	Theodore Utne.
Anoka	4,287	O. E. Smith.
Aurora	2,809	Stanley Adkins.
Austin	10,118	S. T. Neveln.
Bemidji	7,086	John C. West.
Blue Earth	2,568	R. A. Hill.
Brainerd	9,591	W. C. Cobb.
MINNESOTA—con.		
Chisholm	9,039	J. P. Vaughan.
Cloquet	5,127	Peter Olesen.
Columbia Heights (R. F. D. Minneapolis).	2,968	L. W. Isherwood.
Crookston	6,825	G. H. Sanberg.
Crosby	3,500	H. R. Edwards.
Detroit	3,428	L. U. Towle.
Duluth	98,917	J. H. Bentley.
Ely	4,902	H. E. White.
Eveleth	7,205	J. V. Voorhees.
Fairmont	4,630	D. S. Brainard.
Faribault	11,089	W. E. Peik.
Fergus Falls	7,581	W. O. Lippitt.
Gilbert	3,510	K. K. Tibbetts.
Grand Rapids	2,914	C. C. Baker.
Hastings	4,571	E. A. Durbahn.
Hibbing	15,089	C. C. Alexander.
Hutchinson	3,379	Sam E. Tift.
International Falls	3,448	G. V. Kinney.
Lake City	2,846	M. H. Gullickson.
Litchfield	2,790	W. H. Hollands.
Little Falls	5,500	E. B. Bergquist.
Luverne	2,782	H. C. Bell.
Mankato	12,469	E. S. Selle.
Marshall	3,092	L. C. McCarty.
Melrose	2,529	E. J. Sweeney.
Minneapolis	380,582	B. B. Jackson.
Montevideo	4,419	J. J. Bohlander.
Moorhead	5,720	M. L. Jacobson.
New Ulm	6,745	Arnold Gloor.
Northfield	4,023	M. P. Fobes.
Owatonna	7,252	John J. Skinner.
Pipestone	3,325	A. C. Tibbetts.
Red Wing	8,637	O. W. Herr.
Rochester	13,722	Winfred G. Bolcom.
St. Cloud	15,873	P. R. Spencer.
St. James	2,673	J. Roy Struble.
St. Paul	234,698	Shattuck O. Hartwell.
St. Peter	4,335	Melville R. Davis.
Sauk Center	2,699	E. R. Edwards.
South St. Paul	6,860	D. E. Hickey.
Staples	2,570	P. M. Atwood.
Stillwater	7,735	J. C. Davies.
Thief River Falls	4,685	I. T. Simley.
Two Harbors	4,546	C. E. Compton.
Virginia	14,022	E. T. Duffield.
Waseca	3,908	S. C. Huffman.
West Minneapolis (P. O., Hopkins).	3,055	R. J. Mayo.
West St. Paul	2,962	J. W. Klinker.
Willmar	5,892	George O. Brohaugh.
Winona	19,143	Robert B. Irons.
Worthington	3,481	C. A. Patchin.
MISSISSIPPI.		
Aberdeen	4,071	Edgar S. Bowlus.
Amory	2,861	J. O. Donaldson.
Bay St. Louis	3,033	Leon McClur.
Biloxi	10,937	Claude Bennett.
Brookhaven	4,706	S. M. Byrd.
Canton	3,252	H. R. Carter.
Charleston	3,007	R. W. Boyett.
Clarksdale	7,552	H. B. Heidelberg.
Columbia	2,326	Wm. O. Brumfield.
Columbus	10,501	H. H. Ellis.
Corinth	5,198	M. E. Moffitt.
Greenville	11,560	E. E. Bass.
Greenwood	7,793	C. E. Saunders.
Grenada	3,402	John Rundle.
Gulfport	8,157	R. G. Butler.
Hattiesburg	13,270	J. C. Meadows.
Jackson	22,817	Edward L. Bailey.
Laurel	13,037	R. H. Watkins.
McComb	7,775	Joseph E. Gibson.

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IV.—Superintendents of Public Schools in Cities and Towns—Continued.

City.	Population, census of 1920.	Superintendent or supervising principal.
MISSISSIPPI—con.		
Meridian	23,399	W. C. Williams.
Moss Point	3,340	W. M. Alexander.
Natchez	12,608	W. H. Braden.
New Albany	2,531	Bayard L. Coulter.
Okolona	3,852	W. M. Cox.
Pascagoula	6,082	T. C. Lockard.
Starkville	2,596	R. C. Morris.
Tupelo	5,055	Thomas M. Milam.
Vicksburg	18,072	J. P. Carr.
Water Valley	4,315	Guy D. Dean.
West Point	4,400	Bailey Schumpert.
Winona	2,572	Henry M. Frizell.
Yazoo City	5,244	R. L. Bedwell.
MISSOURI.		
Aurora	3,575	D. W. Clayton.
Bonne Terre	3,815	B. F. Melcher.
Boonville	4,665	C. E. Chrane.
Brookfield	6,304	L. V. Crookshank.
Butler	2,702	Charles A. Lee.
Cameron	3,248	A. C. Gwinn.
Cape Girardeau	10,252	J. N. Crocker.
Carrollton	3,218	Geo. D. Dietrich.
Carthage	10,068	W. C. Barnes.
Caruthersville	4,750	J. H. Goodin.
Chaffee	3,035	C. M. Green.
Charleston	3,410	Vest C. Myers.
Chillicothe	6,772	James R. Kerr.
Clayton	3,028	E. E. Morton.
Clinton	5,098	Arthur Lee.
Columbia	10,392	W. I. Oliver.
De Soto	5,003	H. L. Bowman.
Dexter	2,635	Ira H. R. Welch.
Eldon	2,636	T. E. Vaughan.
Excelsior Springs	4,165	W. S. Smith.
Farmington	2,085	W. L. Johns.
Festus	3,348	James Sutton.
Fredericktown	3,124	E. O. Wiley.
Fulton	5,595	J. T. Bush.
Hannibal	19,306	L. McCartney.
Higginsville	2,724	D. W. Branam.
Independence	11,886	E. B. Street.
Jefferson City	14,490	W. M. Oakerson.
Joplin	29,902	William T. Harris.
Kansas City	321,410	I. I. Cammack.
Kennett	3,622	Egbert Jennings.
Kirksville	7,213	Charles Banks.
Kirkwood	4,422	Edw. H. Beumer.
Lebanon	2,818	Roscoe V. Cramer.
Lexington	4,695	L. H. Bell.
Liberty	3,097	J. L. Campbell.
Louisiana	4,060	R. R. Rowley.
Macon	3,549	J. C. Bond.
Maplewood	7,431	J. Richmond.
Marceline	3,760	G. H. Merideth.
Marshall	5,200	W. M. Westbrook.
Maryville	4,711	L. E. Ziegler.
Mexico	6,013	L. B. Hawthorne.
Moberly	12,808	M. F. Beach.
Monett	4,206	Finis E. Engleman.
Neosho	3,968	Charles Baldwin.
Nevada	7,139	C. F. Daugherty.
Poplar Bluff	8,042	Geo. W. Beswick.
Richmond	4,409	A. L. Dailey.
St. Charles	8,503	William F. Knox.
St. Joseph	77,939	J. W. Thalman.
St. Louis	772,897	John J. Maddox.
Sedalia	21,144	C. A. Greene.
Sikeston	3,613	Roy V. Ellise.
Slater	3,797	J. W. Sullivan.
Springfield	39,631	W. W. Thomas.
Trenton	6,951	O. G. Sanford.
University	6,792	Horace M. Buckley.
Warrensburg	4,811	Edward Beatty.
Washington	3,132	R. F. Nichols.
MISSOURI—contd.		
Webb City	7,807	C. W. Oldham.
Webster Groves	9,474	Frank Hamsher.
West Plains	3,178	J. Will Pierce.
MONTANA.		
Anaconda	11,668	W. K. Dwyer.
Billings	15,100	Ward H. Nye.
Bozeman	6,188	Risdon J. Cunningham.
Butte	41,611	H. H. Douglass.
Deer Lodge	3,780	Owen D. Speer.
Dillon	2,701	Grant E. Finch.
Glendive	3,816	E. T. Carroll.
Great Falls	24,121	S. D. Largent.
Havre	5,429	Charles P. Milne.
Helena	12,037	John Dietrich.
Kalispell	5,147	William D. Swetland.
Lewistown	6,120	C. G. Manning.
Livingston	6,311	B. A. Winans.
Miles City	7,937	John A. Anderson.
Missoula	12,668	Ira B. Fee.
Red Lodge	4,515	F. B. Bates.
Whitefish	2,867	H. L. Hayden.
NEBRASKA.		
Alliance	4,591	W. R. Pate.
Auburn	2,863	A. M. Nelson.
Aurora	2,962	J. A. Doremus.
Beatrice	9,664	A. T. Stoddard.
Blair	2,702	James Skinkle.
Broken Bow	2,567	H. R. Partridge.
Chadron	4,412	T. R. Crawford.
Columbus	5,410	C. Ray Gates.
Fairbury	5,454	W. H. Morton.
Falls City	4,930	B. H. Groves.
Fremont	9,605	A. H. Waterhouse.
Gering	2,508	W. C. Findley.
Grand Island	13,947	R. J. Barr.
Hastings	11,647	A. H. Staley.
Havelock	3,602	Frank F. Adams.
Holdrege	3,108	J. C. Mitchell.
Kearney	7,702	O. A. Wirsig.
Lincoln	54,948	M. C. Lefler.
McCook	4,303	J. A. True.
Nebraska City	6,279	Wiley G. Brooks.
Norfolk	8,634	H. B. Simon.
North Platte	10,466	C. L. Littel.
Omaha	191,601	J. H. Beveridge.
Plattsmouth	4,190	George E. De Wolf.
Schuyler	2,636	R. T. Fosnot.
Scottsbluff	6,912	E. L. Rouse.
Sidney	2,852	W. J. Braham.
Superior	2,719	John L. McCommons.
University Place	4,112	A. H. Dixon.
Wymore	2,592	E. M. Short.
York	5,388	A. W. Graham.
NEVADA.		
Reno	12,016	B. D. Billinghurst.
Sparks	3,238	C. L. Neely.
Tonopah	4,144	Walter W. Anderson.
NEW HAMPSHIRE.		
Berlin	16,104	Carl M. Bair.
Claremont	9,524	Albert B. Kellogg.
Concord	22,167	L. J. Rundlett.
Conway	3,102	L. M. Felch.
Derry	5,382	Carl Cotton.
Dover	13,029	J. E. Wignot.
Exeter	4,604	Clifton A. Towle.

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IV.—Superintendents of Public Schools in Cities and Towns—Continued.

City.	Population, census of 1920.	Superintendent or supervising principal.
NEW HAMPSHIRE—continued.		
Franklin	6,318	George A. Keith.
Gorham	2,734	Charles W. Walker.
Haverhill	3,406	Norman J. Page.
Keene	11,210	Wm. C. T. Adams.
Laconia	10,897	John S. Gilman.
Lancaster	2,819	John H. Fuller.
Lebanon	6,162	Herbert L. Sawyer
Littleton	4,239	Vernon K. Bracket
Manchester	78,384	Herbert F. Taylor
Milford	3,783	Harold C. Bales.
Nashua	28,379	Charles H. Noyes
Newmarket	3,181	Justin O. Wellman.
Newport	4,109	W. H. S. Ellingwood.
Northumberland	2,567	O. M. Holman.
Pembroke (P. O., Suncook).	2,563	Henry S. Roberts.
Peterboro	2,615	L. E. Prior.
Portsmouth	13,569	William H. Slayton.
Rochester	9,673	Alfred W. Smith.
Somersworth	6,688	Walter H. Young.
Walpole	2,553	W. J. English.
NEW JERSEY.		
Asbury Park	12,400	A. E. Kraybill.
Atlantic City	50,707	C. B. Boyer.
Audubon	4,740	Alice C. Summerill.
Bayonne	76,754	Preston H. Smith.
Belleville	15,660	G. R. Gerard.
Bergenfield	3,667	Roy W. Brown.
Beverly	2,562	James B. Dilks.
Bloomfield	22,019	George Morris.
Bogota	3,906	Frank E. Tilton.
Boonton	5,372	M. E. Townsend.
Bordentown	4,371	Robert M. Oberholser.
Boundbrook	5,906	Louis De Witt Deyo.
Bridgeton	14,323	David C. Porter.
Burlington	9,049	Van H. Smith.
Butler	2,886	R. J. Ellenberger.
Caldwell	3,993	D'Arcy Barnett.
Camden	116,309	James E. Bryan.
Cape May	2,999	E. R. Brunyate.
Carlstadt	4,472	George Kintner.
Cliffside Park (P. O., Grantwood).	5,709	George F. Hall.
Clifton	26,470	George J. Smith.
Collingswood	8,714	Henry J. Neal.
Dover	9,803	R. S. Bowlby.
Dumont	2,531	L. J. Honiss.
Dunellen	3,394	M. Burr Mann.
East Newark	3,057	Thomas W. Hopkins.
East Orange	50,710	Clifford J. Scott.
East Rutherford	5,463	Frank J. Oglee.
Edgewater	3,530	Wm. F. Conway.
Egg Harbor	2,622	D. R. Rohrbach.
Elizabeth	95,783	Frederick E. Emmons.
Englewood	11,627	Winton J. White.
Fairview	4,882	Z. G. Masten.
Flemington	2,590	Paul H. Axtell.
Fort Lee	5,761	Arthur E. Chase.
Franklin	4,075	Ernest N. Roselle.
Freehold	4,768	Wm. M. Smith.
Garfield	19,381	Wm. H. Sturges.
Glen Ridge	4,620	Sidney G. Firman.
Gloucester	12,162	Wilmer F. Burns.
Guttenberg	6,726	John F. O'Toole.
Hackensack	17,667	William E. Stark.
Hackettstown	2,936	Charles H. Reagle.
Haddonfield	5,643	Fred A. Nims.
Haddon Heights	2,950	Frank S. Woolson.
Haledon	3,435	Absalom Grundy.
Hammonton	6,417	N. C. Holdridge.
Harrison	15,721	James F. Prendergast.
NEW JERSEY—con		
Hasbrouck Heights.	2,895	J. Earle Thomson.
Hawthorne	5,135	F. H. Thoms.
Highland Park (P. O., New Brunswick).	4,866	F. Willard Furth.
Hightstown	2,674	Jane B. Donnell.
Hoboken	68,166	Jos. F. Brandt.
Irvington	25,480	Robert L. Saunders.
Jersey City	298,103	Henry Snyder.
Kearny (P. O., Arlington).	26,724	Herman Dressel.
Keyport	4,415	Willis E. Bilderback.
Lambertville	4,660	John H. Herring.
Leonia	2,979	Nelson C. Smith.
Little Ferry	2,715	Edward E. Gaige.
Lodi	8,175	Henry V. Matthews.
Long Branch	13,521	Charles T. Stone.
Madison	5,523	W. B. Davis.
Merchantville	2,749	Geo. A. Land.
Metuchen	3,334	L. G. Van Kirk.
Milltown	2,573	Harry R. Mensch.
Millville	14,691	Frederick J. Sickles.
Montclair	28,810	Don C. Bliss.
Morristown	12,548	J. Burton Wiley.
Newark	414,524	David B. Corson.
New Brunswick	32,779	Ira T. Chapman.
Newton	4,125	E. L. Baxter.
North Bergen	23,344	M. F. Husted.
North Plainfield (P. O., Plainfield).	6,916	Andrew J. Pietsch.
Nutley	9,421	Paul R. Radcliffe.
Ocean City	2,512	James M. Stevens.
Orange	33,268	W. Burton Patrick.
Palisades Park	2,633	Charles B. Armstrong.
Passaic	63,841	Fred S. Shepherd.
Paterson	135,875	John R. Wilson.
Paulsboro	4,352	Bennett K. Matlack.
Pennsgrove	6,060	Merritt Jenkins.
Perth Amboy	41,707	S. E. Shull.
Phillipsburg	16,923	Henry B. Howell.
Pitman	3,385	Daniel W. Davis.
Plainfield	27,700	Henry M. Maxson.
Pleasantville	5,887	Wm. C. Sullivan.
Princeton	5,917	Mabel T. Vanderbilt.
Prospect Park (P. O., Paterson).	4,292	Thomas L. Bump.
Rahway	11,042	W. F. Little.
Raritan	4,457	Oscar A. Fisher.
Red Bank	9,251	E. C. Gilland.
Ridgefield Park	8,575	A. Ray Palmer.
Ridgewood	7,580	Ira W. Travell.
Rockaway	2,655	Charles L. Curtis.
Roosevelt (P. O., Chrome).	11,047	B. V. Hermann.
Roselle	5,737	Edward V. Walton.
Roselle Park (P. O., Elizabeth).	5,438	E. F. Smith.
Rutherford	9,497	Clarence A. Fetterly.
Salem	7,435	A. G. Dohner.
Secaucus	5,423	M. A. Pechtel.
Somerville	6,718	T. Latimer Brooks.
South Amboy	7,897	Oscar O. Barr.
South Orange	7,274	H. W. Foster.
South River	6,596	William S. Lesh.
Summit	10,174	H. A. Sprague.
Tenafly	5,650	Ralph S. Maugham.
Town of Union (P. O., Weehawken).	20,651	Luther N. Steele.
Trenton	119,289	William J. Bickett.
Verona	3,039	Frederic N. Brown.
Vineland	6,799	H. L. Reber.
Wallington	5,715	John M. Myers.

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IV.—Superintendents of Public Schools in Cities and Towns—Continued.

City.	Population, census of 1920.	Superintendent or supervising principal.
NEW JERSEY—con		
Wanaque	2,916	O. L. Fleetwood.
Washington	3,341	S. M. Tressler.
Weehawken	14,485	Frank A. Balch.
Westfield	9,063	Charles A. Philhower.
West Hoboken	40,074	Arthur O. Smith.
West New York	29,926	H. W. Maxson.
West Orange	15,573	S. C. Strong.
Westwood	2,597	Edward D. Graber.
Wharton	2,877	William P. Curtis.
Wildwood	2,790	Henry C. Chalmers.
Woodbury	5,801	Malcolm G. Thomas.
Wrightstown	5,288	Mrs. Elizabeth D. Pullen.
NEW MEXICO.		
Albuquerque	15,157	John Milne.
Clovis	4,904	Jas. M. Bickley.
Deming	3,212	Edwin D. Martin.
Gallup	3,920	Roy L. White.
Las Cruces	3,969	G. B. Jones.
Las Vegas (city, P. O., East Las Vegas).	4,304	Walter B. McFarland.
Las Vegas (town)	3,902	Margaret Barnard.
Raton	5,544	L. C. Rhoads.
Roswell	7,033	D. N. Pope.
Santa Fe	7,236	Elbert C. Best.
Silver City	2,662	Lela A. Manville.
Tucumcari	3,117	U. O. Anderson.
NEW YORK.		
Albany	113,344	C. Edward Jones.
Albion	4,683	Willis G. Carmer.
Amityville	3,265	Geo. A. Brown.
Amsterdam	33,524	H. T. Morrow.
Auburn	36,192	Henry D. Hervey.
Avon	2,585	Willis G. Saunders.
Babylon	2,523	C. W. Armstrong.
Baldwinsville	3,685	H. E. Elden.
Ballston Spa	4,103	William A. Andrews.
Batavia	13,541	Elwin A. Ladd.
Bath	4,795	Edgar A. Lewis.
Beacon	10,996	E. D. Hewes.
Binghamton	66,800	Daniel J. Kelly.
Brockport	2,980	E. S. Barclay.
Bronxville	3,055	Arthur C. Haff.
Buffalo	506,775	Ernest C. Hartwell.
Canandaigua	7,356	Frank E. Fisk.
Canastota	3,995	E. G. Simmons.
Canton	2,631	John H. Miller.
Carthage	4,320	Sherman L. Howe.
Catskill	4,728	Edward D. Myers.
Cedarhurst	2,838	
Chatham	2,710	Eugene H. Coon.
Clyde	2,528	A. H. Covell.
Cohoes	22,987	Edward Hayward.
Cooperstown	2,725	M. J. Multer.
Corinth	2,576	Harris Crandall.
Corning: District No. 9.	15,820	J. Murray Foster.
Corning: District No. 13		A. M. Blodgett.
Cortland	13,294	F. E. Smith.
Dannemora	2,623	Miss Marion Davis.
Dansville	4,631	Wallace J. Braman.
Depew	5,850	J. M. Barker.
Dobbs Ferry	4,401	B. M. Sheppard.
Dolgeville	3,448	Thos. G. Coffee.
Dunkirk	19,336	Frederick R. Darling.
East Aurora	3,703	H. W. Mead.
East Rochester	3,901	Louis E. Bird.
East Syracuse	4,106	E. T. Hennessy.
Ellenville	3,116	E. C. Hoomer.
Elmira	45,393	Harvey O. Hutchinson.
Elmira Heights	4,188	J. E. Demorest.
Endicott	9,500	Herbert H. Crumb.
Fairport	4,626	H. Claude Hardy.
Falconer	2,742	Hiram J. Baldwin.
Fort Edward	3,871	Franklin Barber.
Fort Plain	2,747	Walter M. Pratt.
Frankfort	4,198	B. C. Van Ingen.
Fredonia	6,051	William B. Blaisdell.
Freeport	8,509	G. F. Du Bois.
Fulton	13,043	James R. Fairgrieve.
Geneva	14,648	A. J. Merrell.
Glen Cove	8,664	H. H. Chapman.
Glens Falls	16,638	Elbert W. Griffith.
Gloversville	22,075	James A. Estee.
Goshen	2,843	Montgomery C. Smith.
Gouverneur	4,143	L. T. Wilcox.
Gowanda	2,673	Reverdy E. Baldwin.
Granville	3,024	R. E. Brown.
Green Island	4,411	James Heatly.
Greenport	3,122	Oscar E. Swanson.
Hamburg	3,185	Ford R. Park.
Hastings upon Hudson.	5,526	H. H. Murphy.
Haverstraw	5,226	L. O. Markham.
Hempstead	6,382	T. P. Calkins.
Herkimer	10,453	L. W. Bills.
Highland Falls	2,588	R. O. Stephens.
Hoosick Falls	4,896	Clyde L. Harvey.
Hornell	15,025	H. S. Dodge.
Hudson	11,745	Charles S. Williams.
Hudson Falls	5,761	George A. Ingalls.
Ilion	10,169	H. M. Schwartz.
Irvington	2,701	Fred J. Bierce.
Ithaca	17,004	Frank D. Boynton.
Jamestown	38,917	Milton J. Fletcher.
Johnson City	8,587	Frank M. Smith.
Johnstown	10,908	E. L. Ackley.
Kenmore (P. O., Tonawanda).	3,160	F. C. Densberger.
Kingston	26,688	M. J. Michael.
Lackawanna	17,918	William J. Breen.
Lancaster	6,059	F. L. Smith.
La Salle	3,813	W. H. Daley (school No. 4). W. Van Willis (school No. 5).
Lawrence	2,861	Robert G. Horn.
Le Roy	4,203	E. B. Taylor.
Little Falls	13,029	E. D. Henry.
Lockport	21,308	Roy B. Kelley.
Lowville	3,127	Leon A. Davis.
Lynbrook	4,371	C. D. Vosburgh.
Lyons	4,253	W. H. Kinney.
Malone	7,556	H. H. Lamberton.
Mamaroneck	6,571	Arthur Z. Boothby.
Massena	5,993	D. Howard Naylor.
Mechanicsville	8,166	E. H. Burdick.
Medina	6,011	H. E. Brown.
Middletown	18,420	James F. Tuthill.
Mineola	3,016	Jacob I. Allart.
Mohawk	2,919	Harry M. Fisher.
Mount Kisco	3,944	H. M. Jennings.
Mount Morris	3,312	Harold J. Coon.
Mount Vernon	42,726	William H. Holmes.
Newark	6,964	F. Neff Stroup.
Newburgh	30,366	Snyder J. Gage.
New Rochelle	36,213	Albert Leonard.
New York	5,620,048	William L. Ettinger.
Niagara Falls	50,760	John B. Laidlaw.
North Tarrytown	5,927	Charles A. Benedict.
North Tonawanda	15,482	Delmer E. Batcheller.
Norwich	8,268	Frank R. Wassung.
Nyack	4,444	H. J. Wightman.
Ogdensburg	14,609	Frances C. Byrn.
Olean	20,506	Wm. C. Greenawalt.

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IV.—Superintendents of Public Schools in Cities and Towns—Continued.

City.	Population, census of 1920.	Superintendent or supervising principal.
NEW HAMPSHIRE—continued.		
Franklin	6,318	George A. Keith.
Gorham	2,734	Charles W. Walker.
Haverhill	3,406	Norman J. Page.
Keene	11,210	Wm. C. T. Adams.
Laconia	10,897	John S. Gilman.
Lancaster	2,819	John H. Fuller.
Lebanon	6,162	Herbert L. Sawyer
Littleton	4,239	Vernon K. Bracket
Manchester	78,384	Herbert F. Taylor
Milford	3,783	Harold C. Bales.
Nashua	28,379	Charles H. Noyes
Newmarket	3,181	Justin O. Wellman.
Newport	4,109	W. H. S. Ellingwood.
Northumberland	2,567	O. M. Holman.
Pembroke (P. O., Suncook).	2,563	Henry S. Roberts.
Peterboro	2,615	L. E. Prior.
Portsmouth	13,569	William H. Slayton.
Rochester	9,673	Alfred W. Smith.
Somersworth	6,688	Walter H. Young.
Walpole	2,553	W. J. English.
NEW JERSEY.		
Asbury Park	12,400	A. E. Kraybill.
Atlantic City	50,707	C. B. Boyer.
Audubon	4,740	Alice C. Summerill.
Bayonne	76,754	Preston H. Smith.
Belleville	15,660	G. R. Gerard.
Bergenfield	3,667	Roy W. Brown.
Beverly	2,562	James B. Dilks.
Bloomfield	22,019	George Morris.
Bogota	3,906	Frank E. Tilton.
Boonton	5,372	M. E. Townsend.
Bordentown	4,371	Robert M. Oberholser.
Boundbrook	5,906	Louis De Witt Deyo.
Bridgeton	14,323	David C. Porter.
Burlington	9,049	Van H. Smith.
Butler	2,886	R. J. Eilenberger.
Caldwell	3,993	D'Arcy Barnett.
Camden	116,309	James E. Bryan.
Cape May	2,999	E. R. Brunyate.
Carlstadt	4,472	George Kintner.
Cliffside Park (P. O., Grantwood).	5,709	George F. Hall.
Clifton	26,470	George J. Smith.
Collingswood	8,714	Henry J. Neal.
Dover	9,803	R. S. Bowlby.
Dumont	2,537	L. J. Honiss.
Dunellen	3,394	M. Burr Mann.
East Newark	3,057	Thomas W. Hopkins.
East Orange	50,710	Clifford J. Scott.
East Rutherford	5,463	Frank J. Oglee.
Edgewater	3,530	Wm. F. Conway.
Egg Harbor	2,622	D. R. Rohrbach.
Elizabeth	95,783	Frederick E. Emmons.
Englewood	11,627	Winton J. White.
Fairview	4,852	Z. G. Masten.
Flemington	2,590	Paul H. Axtell.
Fort Lee	5,761	Arthur E. Chase.
Franklin	4,075	Ernest N. Roselle.
Freehold	4,768	Wm. M. Smith.
Garfield	19,381	Wm. H. Sturges.
Glen Ridge	4,620	Sidney G. Firman.
Gloucester	12,162	Wilmer F. Burns.
Guttenberg	6,726	John F. O'Toole.
Hackensack	17,667	William E. Stark.
Hackettstown	2,936	Charles H. Reagle.
Haddonfield	5,643	Fred A. Nims.
Haddon Heights	2,950	Frank S. Woolson.
Haledon	3,435	Absalom Grundy.
Hammonton	6,417	N. C. Holdridge.
Harrison	15,721	James F. Prendergast.
NEW JERSEY—con		
Hasbrouck Heights.	2,895	J. Earle Thomson.
Hawthorne	5,135	F. H. Thoms.
Highland Park (P. O., New Brunswick).	4,866	F. Willard Furth.
Hightstown	2,674	Jane B. Donnell.
Hoboken	68,166	Jos. F. Brandt.
Irvington	25,480	Robert L. Saunders.
Jersey City	298,103	Henry Snyder.
Kearny (P. O., Arlington).	26,724	Herman Dressel.
Keyport	4,415	Willis E. Bilderback.
Lambertville	4,060	John H. Herring.
Leonia	2,979	Nelson C. Smith.
Little Ferry	2,715	Edward E. Gaige.
Lodi	8,175	Henry V. Matthews.
Long Branch	13,521	Charles T. Stone.
Madison	5,523	W. B. Davis.
Merchantville	2,749	Geo. A. Land.
Metuchen	3,334	L. G. Van Kirk.
Milltown	2,573	Harry R. Mensch.
Millville	14,491	Frederick J. Sickles.
Montclair	28,810	Don C. Bliss.
Morristown	12,548	J Burton Wiley.
Newark	414,524	David B. Corson.
New Brunswick	32,779	Ira T. Chapman.
Newton	4,125	E. L. Baxter.
North Bergen	23,344	M. F. Husted.
North Plainfield (P. O., Plainfield).	6,916	Andrew J. Pietsch.
Nutley	9,421	Paul R. Radcliffe.
Ocean City	2,512	James M. Stevens.
Orange	33,268	W. Burton Patrick.
Palisades Park	2,633	Charles B. Armstrong.
Passaic	63,541	Fred S. Shepherd.
Paterson	135,875	John R. Wilson.
Paulsboro	4,352	Bennett K. Matlack.
Pennsgrove	6,060	Merritt Jenkins.
Perth Amboy	41,707	S. E. Shull.
Phillipsburg	16,923	Henry B. Howell.
Pitman	3,385	Daniel W. Davis.
Plainfield	27,700	Henry M. Maxson.
Pleasantville	5,887	Wm. C. Sullivan.
Princeton	5,917	Mabel T. Vanderbilt.
Prospect Park (P. O., Paterson).	4,392	Thomas L. Bump.
Rahway	11,042	W. F. Little.
Raritan	4,457	Oscar A. Fisher.
Red Bank	9,251	E. C. Gilland.
Ridgefield Park	8,575	A. Ray Palmer.
Ridgewood	7,580	Ira W. Travell.
Rockaway	2,655	Charles L. Curtis.
Roosevelt (P. O., Chrome).	11,047	B. V. Hermann.
Roselle	5,737	Edward V. Walton.
Roselle Park (P. O., Elizabeth).	5,438	E. F. Smith.
Rutherford	9,497	Clarence A. Fetterly.
Salem	7,435	A. G. Dohner.
Secaucus	5,423	M. J. Pechtel.
Somerville	6,718	T. Latimer Brooks.
South Amboy	7,897	Oscar O. Barr.
South Orange	7,274	H. W. Foster.
South River	6,596	William S. Lesh.
Summit	10,174	H. A. Sprague.
Tenafly	5,650	Ralph S. Maugham.
Town of Union (P. O., Weehawken).	20,651	Luther N. Steele.
Trenton	119,289	William J. Bickett.
Verona	3,039	Frederic N. Brown.
Vineland	6,799	H. L. Reber.
Wallington	5,715	John M. Myers.

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IV.—Superintendents of Public Schools in Cities and Towns—Continued.

City.	Population, census of 1920.	Superintendent or supervising principal.
NEW JERSEY—con		
Wanaque	2,916	O. L. Fleetwood.
Washington	3,341	S. M. Tressler.
Weehawken	14,485	Frank A. Balch.
Westfield	9,063	Charles A. Philhower.
West Hoboken	40,074	Arthur O. Smith.
West New York	29,926	H. W. Maxson.
West Orange	15,573	S. C. Strong.
Westwood	2,597	Edward D. Graber.
Wharton	2,877	William P. Curtis.
Wildwood	2,790	Henry C. Chalmers.
Woodbury	5,801	Malcolm G. Thomas.
Wrightstown	5,288	Mrs. Elizabeth D. Pullen.
NEW MEXICO.		
Albuquerque	15,157	John Milne.
Clovis	4,904	Jas. M. Bickley.
Deming	3,212	Edwin D. Martin.
Gallup	3,920	Roy L. White.
Las Cruces	3,969	G. B. Jones.
Las Vegas (city, P. O., East Las Vegas).	4,304	Walter B. McFarland.
Las Vegas (town)	3,902	Margaret Barnard.
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Chatham	2,710	Eugene H. Coon.
Clyde	2,528	A. H. Covell.
Cohoes	22,987	Edward Hayward.
Cooperstown	2,725	M. J. Multer.
Corinth	2,576	Harris Crandall.
Corning: District No. 9. District No. 13	15,820	J. Murray Foster. A. M. Blodgett.
Cortland	13,294	F. E. Smith.
Dannemora	2,623	Miss Marion Davis.
Dansville	4,631	Wallace J. Braman.
Depew	5,850	J. M. Barker.
Dobbs Ferry	4,401	B. M. Sheppard.
Dolgeville	3,448	Thos. G. Coffee.
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East Rochester	3,901	Louis E. Bird.
East Syracuse	4,106	E. T. Hennessy.
Ellenville	3,116	E. C. Hoemer.
Elmira	45,393	Harvey O. Hutchinson.
NEW YORK—con.		
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Endicott	9,500	Herbert H. Crumb.
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Glen Cove	8,664	H. H. Chapman.
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Goshen	2,843	Montgomery C. Smith.
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Gowanda	2,673	Reverdy E. Baldwin.
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Greenport	3,122	Oscar E. Swanson.
Hamburg	3,185	Ford R. Park.
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Hudson Falls	5,761	George A. Ingalls.
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Ithaca	17,004	Frank D. Boynton.
Jamestown	38,917	Milton J. Fletcher.
Johnson City	8,587	Frank M. Smith.
Johnstown	10,908	E. L. Ackley.
Kenmore (P. O., Tonawanda).	3,160	F. C. Densberger.
Kingston	26,688	M. J. Michael.
Lackawanna	17,918	William J. Breen.
Lancaster	6,059	F. L. Smith.
La Salle	3,813	W. H. Daley (school No. 4). W. Van Willis (school No. 5).
Lawrence	2,861	Robert G. Horn.
Le Roy	4,203	E. B. Taylor.
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Lynbrook	4,371	C. D. Vosburgh.
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Massena	5,993	D. Howard Naylor.
Mechanicsville	8,166	E. H. Burdick.
Medina	6,011	H. E. Brown.
Middletown	18,420	James F. Tuthill.
Mineola	3,016	Jacob I. Allart.
Mohawk	2,919	Harry M. Fisher.
Mount Kisco	3,944	H. M. Jennings.
Mount Morris	3,312	Harold J. Coon.
Mount Vernon	42,726	William H. Holmes.
Newark	6,964	F. Neff Stroup.
Newburgh	30,366	Snyder J. Gage.
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Ogdensburg	14,609	Frances C. Byrn.
Olean	20,506	Wm. C. Greenawalt.

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IV.—Superintendents of Public Schools in Cities and Towns—Continued.

City.	Population, census of 1920.	Superintendent or supervising principal.
NEW YORK—con.		
Oneida	10,541	Harry W. Langworthy.
Oneonta	11,582	George J. Dann.
Ossining	10,739	Everett A. Barto.
Oswego	23,626	Frederick Leighton.
Owego	4,147	W. A. McConnell.
Patchogue	4,031	Sheridan Linn.
Peekskill: District No. 7. District No. 8.	15,868	Fred J. Bohlmann. A. D. Dunbar.
Penn Yan	4,517	W. E. De Melt.
Perry	4,717	W. H. McClelland.
Plattsburg	10,909	Geo. M. Elmendorf.
Pleasantville	3,590	John E. Morgan.
Port Chester	16,573	Elmer S. Redman.
Port Jervis	10,171	Arthur H. Naylor.
Potsdam	4,089	Randolph T. Congdon.
Poughkeepsie	35,000	Ward C. Moon.
Rensselaer	10,823	Walter T. Clark.
Rochester	295,750	Herbert S. Weet.
Rockville Center	6,262	William S. Covert.
Rome	26,341	George R. Staley.
Rye	5,308	George E. Webster.
Sag Harbor	2,993	Gilbert R. Lyon.
Salamanca	9,276	A. W. Fortune.
Saranac Lake	5,174	H. V. Littell.
Saratoga Springs	13,181	Charles L. Mosher.
Saugerties	4,013	Edward R. James.
Scarsdale	3,506	George E. Hewitt.
Schenectady	88,723	E. R. Whitney.
Scotia	4,358	A. W. Miller.
Seneca Falls	6,389	A. C. Hamilton.
Sidney	2,670	Charles F. Ferry, Masonville.
Silver Creek	3,260	W. H. Edwards.
Solvay	7,352	John P. Sherrard.
Southampton	2,891	H. F. Sabine.
Spring Valley	3,818	Guy P. Rego.
Suffern	3,154	A. P. Burroughs.
Syracuse	171,717	P. M. Hughes.
Tarrytown	5,807	L. V. Case.
Tonawanda	10,068	Frank K. Sutley.
Troy: Lansingburg district. Union district	72,013	N. K. White. Arvie Eldred.
Tuckahoe	3,509	Margaret L. Hayes (acting)
Tupper Lake	2,508	Leo E. Endersbee.
Union	3,303	
Utica	94,156	John A. De Camp.
Walden	5,493	Earl W. Bennett.
Walton	3,598	C. P. Wells.
Wappingers Falls	3,235	W. E. Archer.
Warsaw	3,622	Herbert Preston.
Waterford	2,637	Earl P. Watkins.
Waterloo	3,809	A. H. Downey.
Watertown	31,285	Frank S. Tisdale.
Watervliet	16,073	Hugh H. Lansing.
Watkins	2,785	John A. Beers.
Waverly	5,270	P. C. Meserve.
Wellsville	4,996	Howard J. Steere.
Westfield	3,413	L. W. Swain.
Whitehall	5,258	Arthur J. Laidlaw.
White Plains	21,031	John W. Lumbard.
Whitesboro	3,038	Rollin W. Thompson.
Yonkers	100,176	Charles E. Garton.
NORTH CAROLINA.		
Albemarle	2,691	J. H. McIver.
Ashboro	2,559	D. W. Maddox.
Asheville	28,504	W. L. Brooker.
Beaufort	2,968	C. W. E. Pittman.
Belmont	2,941	H. C. Sisk.
Burlington	5,952	C. C. Haworth.
Canton	2,584	W. C. Allen.
Charlotte	46,338	H. P. Harding.
Concord	9,903	A. S. Webb.
Dunn	2,805	W. S. Snipes.
Durham	21,719	Edwin D. Pusey.
Edenton	2,777	Joe R. Nixon.
Elizabeth City	8,925	S. L. Sheep.
Fayetteville	8,877	M. B. Andrews.
Gastonia	12,871	William P. Grier.
Goldsboro	11,296	O. A. Hamilton.
Greensboro	19,861	Frederick Archer.
Greenville	5,772	J. H. Rose.
Hamlet	3,808	C. S. Warren.
Henderson	5,222	J. T. Alderman.
Hendersonville	3,720	A. W. Honeycutt.
Hickory	5,076	R. W. Carver.
High Point	14,302	W. M. Marr.
Kings Mountain	2,800	F. C. Nye.
Kinston	9,771	K. R. Curtis.
Laurinburg	2,643	S. W. Rabb.
Lenoir	3,718	Horace Sisk.
Lexington	5,254	J. H. Cowles.
Lincolnton	3,390	E. D. Johnson.
Lumberton	2,691	W. H. Cale.
Monroe	4,084	S. G. Hawfield.
Mooresville	4,315	J. O. Faulkner.
Morehead City	2,958	E. P. Mendenhall.
Morgantown	2,857	H. F. Srygley.
Mount Airy	4,752	L. M. Epps.
New Bern	12,198	H. B. Smith.
Newton	3,021	M. S. Beam.
Oxford	3,606	F. G. Credle.
Raleigh	24,418	S. B. Underwood.
Reidsville	5,333	P. H. Gwynn, jr.
Roanoke Rapids	3,369	E. J. Coltrane.
Rockingham	2,509	L. I. Bell.
Rocky Mount	12,742	R. M. Wilson.
Salisbury	13,884	T. Wingate Andrews
Sanford	2,977	C. E. Teague.
Shelby	3,609	I. C. Griffin.
Spencer	2,510	H. C. Miller.
Statesville	7,895	R. M. Gray.
Tarboro	4,568	Robert F. Moseley.
Thomasville	5,676	J. N. Hauss.
Wadesboro	2,648	C. L. Cates.
Washington	6,314	Frank L. Ashley.
Wilmington	33,372	W. A. Graham.
Wilson	10,612	Charles L. Coon.
Winston-Salem	48,395	R. H. Latham.
NORTH DAKOTA.		
Bismarck	7,122	J. M. Martin.
Devils Lake	5,140	Nelson Sauvain.
Dickinson	4,122	P. S. Berg.
Fargo	21,961	J. G. Moore.
Grafton	2,512	R. B. Murphy.
Grand Forks	14,010	W. C. Stebbins.
Jamestown	6,627	Norman C. Koontz.
Mandan	4,336	C. L. Love.
Minot	10,476	L. A. White.
Valley City	4,681	G. W. Hanna.
Wahpeton	3,069	Martha T. Fulton.
Williston	4,178	George A. McFarland
OHIO.		
Akron	208,435	Carroll R. Reed.
Alliance	21,603	B. F. Stanton.
Ashland	9,249	J. A. McDowell.
Ashtabula	22,082	H. C. Dieterich.
Athens	6,418	C. E. Stalley.
Barberton	18,811	U. L. Light.
Barnesville	4,365	W. C. Jordan.

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IV.—Superintendents of Public Schools in Cities and Towns—Continued.

City.	Population, census of 1920.	Superintendent or supervising principal.
OHIO—continued.		
Bedford	2,677	A. E. Moody.
Bellaire	15,081	J. V. Nelson.
Bellefontaine	9,336	R. J. Kiefer.
Bellevue	5,776	C. M. Carrick.
Berea	2,959	S. S. Dickey.
Bowling Green	5,788	D. C. Bryant.
Bridgeport	3,977	S. A. Gillette.
Bryan	4,252	J. W. Wyandt.
Bucyrus	10,425	John R. Patterson.
Byesville	2,775	W. H. Nicholson.
Cambridge	13,104	W. E. Arter.
Canton	87,091	Wilson Hawkins.
Celina	4,226	C. V. Sensenbaugh.
Chillicothe	15,831	J. H. Mason.
Cincinnati	401,247	Randall J. Condon.
Circleville	7,049	J. O. Eagleson.
Cleveland	796,841	Robinson G. Jones.
Cleveland Heights	15,236	James W. McLane.
Clyde	3,099	A. J. Love.
Columbus	237,031	J. G. Collicott.
Conneaut	9,343	C. M. Dickey.
Coshocton	10,847	O. B. Clifton.
Crestline	4,313	E. W. Bell.
Crooksville	3,311	E. D. Bates.
Cuyahoga Falls	10,200	W. H. Richardson.
Dayton	152,559	Paul C. Stetson.
Defiance	8,876	E. W. Howey.
Delaware	8,758	H. T. Main.
Delphos	5,745	Hugh R. Hick.
Dennison	5,524	W. H. Angel.
Dover	8,101	S. O. Mase.
East Cleveland	27,292	W. H. Kirk.
East Liverpool	21,411	Franklin P. Geiger.
East Palestine	5,750	A. D. Ladd.
East Youngstown	11,237	W. Marshall Coursen.
Eaton	3,210	John O'Leary.
Elmwood Place	3,991	W. S. Eversull.
Elyria	20,474	F. M. Shelton.
Euclid	3,363	Wilbert A. Franks.
Fairport (P. O., Fairport Harbor)	4,211	M. C. Helm.
Findlay	17,921	I. F. Matteson.
Fostoria	9,987	F. H. Warren.
Franklin	3,071	G. H. Gerke.
Fremont	12,468	F. P. Timmons.
Galion	7,374	J. J. Phillips.
Gallipolis	6,070	W. G. Scarberry.
Garfield Heights	2,550	
Geneva	3,081	Jas. H. Fortney.
Girard	6,556	H. L. Cash.
Glouster	3,140	M. M. Bryson.
Greenfield	4,344	E. L. Porter.
Greenville	7,104	Minor McCool.
Hamilton	39,675	Darrell Joyce.
Hillsboro	4,356	O. C. Jackson.
Hubbard	3,320	A. E. Robinson.
Ironton	14,007	E. Q. Swan.
Jackson	5,842	J. E. Kinnison.
Kenmore	12,083	Chas. E. McCorkle.
Kent	7,070	W. A. Walls.
Kenton	7,690	D. B. Clark.
Lakewood	41,732	C. P. Lynch.
Lancaster	14,706	J. R. Clements.
Lebanon	3,896	Claude A. Bruner.
Leetonia	2,688	H. S. Floyd.
Lima	41,326	J. E. Collins.
Lisbon	3,113	Wm. H. Geiger.
Lockland	4,007	A. L. Heer.
Logan	5,493	C. F. Ridgley.
London	4,080	W. H. Rice.
Lorain	37,295	D. J. Boone.
Mansfield	27,824	H. H. Helter.
Marietta	15,140	B. O. Skinner.
Marion	27,891	H. R. McVay.
Martins Ferry	11,634	R. C. Maston.
Marysville	3,635	W. R. Hoover.
Massillon	17,428	Lewis E. York.
Maumee	3,195	H. E. Dewey.
Medina	3,430	William E. Conkle.
Miamisburg	4,383	Harris V. Bear.
Middleport	3,772	A. W. McKay.
Middletown	23,594	R. W. Solomon.
Mingo Junction	4,616	Frank Linton.
Montpelier	3,052	C. R. Dustin.
Mount Vernon	9,237	A. W. Elliott.
Napoleon	4,143	W. R. Ash.
Nelsonville	6,440	D. A. Ferree.
Newark	26,718	Oren J. Barnes.
New Boston (R. F. D. Portsmouth).	4,817	D. E. Ross.
Newcomerstown	3,389	W. B. Hayes.
New Lexington	3,157	E. C. Darnell.
New Philadelphia.	10,718	Chas. F. Limbach.
Niles	13,080	S. L. Eby.
Norwalk	7,379	C. C. Patterson.
Norwood	24,966	W. S. Cadman.
Oberlin	4,236	Howard L. Rawdon.
Orrville	4,107	M. C. Avery.
Painesville	7,272	C. C. Underwood.
Piqua	15,044	Geo. C. Dietrich.
Pomeroy	4,294	C. T. Coates.
Port Clinton	3,928	Alonzo F. Myers.
Portsmouth	33,011	Frank Appel.
Ravenna	7,219	E. O. Trescott.
Reading	4,540	R. J. Lyon.
St. Bernard	6,312	F. M. Reynolds.
St. Marys	5,679	C. C. McBroom.
Salem	10,305	John S. Alan.
Salineville	2,700	C. W. Vermillion.
Sandusky	22,897	F. J. Prout.
Sebring	3,541	Ralph W. Ling.
Shadyside	3,084	G. M. McCommon.
Shelby	5,578	R. I. Lewis.
Sidney	8,590	Henry A. Hartman.
Springfield	60,840	Geo. E. McCord.
Steubenville	28,508	R. L. Erwin.
Struthers	5,847	W. P. Moody.
Tiffin	14,375	Chas. A. Krout.
Toledo	243,164	Chas. S. Meek.
Toronto	4,684	S. C. Dennis.
Troy	7,260	T. E. Hook.
Uhrichsville	6,428	Harry B. Galbraith.
Upper Sandusky	3,708	E. H. Brown.
Urbana	7,621	I. N. Keyser.
Van Wert	8,100	H. L. Sullivan.
Wadsworth	4,742	P. V. Kreider.
Wapakoneta	5,295	C. C. Nardin.
Warren	27,050	H. B. Turner.
Washington, C. H.	7,962	Wm. McClain.
Wauseon	3,035	E. L. Bowsher.
Wellston	6,687	S. H. Maharry.
Wellsville	8,849	S. E. Daw.
West Park	8,581	F. E. Reynolds.
Willard	3,889	W. C. Kramer.
Willoughby	2,656	
Wilmington	5,037	O. K. Probasco.
Wooster	8,204	Geo. C. Maurer.
Xenia	9,110	C. A. Waltz.
Youngstown	132,358	O. L. Reid.
Zanesville	29,569	F. C. Kirkendall.
OKLAHOMA.		
Ada	8,012	J. E. Hickman.
Altus	4,522	A. B. Smith.
Alva	3,913	Albert W. Fanning.
Anadarko	3,116	L. O. McClure.
Ardmore	14,181	C. W. Richard.
Bartlesville	14,417	G. B. Clift.
Blackwell	7,174	A. J. Lovett.
Bristow	2,460	C. E. Hutton.

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IV.—Superintendents of Public Schools in Cities and Towns—Continued.

City.	Population, census of 1920.	Superintendent or supervising principal.
OKLAHOMA—con.		
Cardin	2,640	
Chickasha	10,179	T. T. Montgomery.
Claremore	3,435	A. W. Bevers.
Cleveland	2,717	P. B. Humphrey.
Clinton	2,596	W. W. Isle.
Coalgate	3,009	A. P. Lever.
Collinsville	3,801	E. J. Stevenson.
Commerce	2,555	H. C. Calhoun.
Cushing	6,328	J. D. Barney.
Drumright	6,460	W. C. French.
Duncan	3,463	Hughes B. Davis.
Durant	7,340	R. R. Tompkins.
Elk City	2,814	Arthur L. Richards.
El Reno	7,737	C. E. Grady.
Enid	16,576	E. D. Price.
Frederick	3,822	J. O. Shaw.
Guthrie	11,757	C. N. Peak.
Hartshorne	3,480	C. E. Fair.
Henryetta	5,889	John T. Hefley.
Hobart	2,936	F. A. Balyeat.
Holdenville	2,932	C. L. Reeves.
Hominy	2,875	
Hugo	6,368	M. P. Hammond.
Idabel	3,067	Jas. B. Earle.
Lawton	8,930	M. L. Cotton.
McAlester	12,095	W. G. Masterson.
Madill	2,717	F. A. Ramsey.
Mangum	3,405	Wallace Emerson.
Miami	6,802	John Lofty.
Muskogee	30,277	Richard J. Tighe.
Newkirk	2,333	J. W. Turner.
Norman	5,004	A. S. Faulkner.
Nowata	4,435	H. Clay Fisk.
Oklahoma	91,295	J. A. Whiteford.
Okmulgee	17,430	H. B. Bruner.
Pauls Valley	3,094	John T. Butcher.
Pawhuska	6,414	L. S. Stephens.
Perry	3,154	W. F. Shultz.
Picher	9,676	C. S. Wortman.
Ponca City	7,051	J. N. Hamilton.
Poteau	2,679	W. A. Erdman.
Purcell	2,938	K. W. Harris.
Sand Springs	4,076	Alvin C. Elliott.
Sapulpa	11,634	J. R. Barton.
Shawnee	15,348	Hugh G. Faust.
Stillwater	4,701	W. H. Bishop.
Sulphur	3,667	A. C. Floyd.
Tulsa	72,075	E. E. Oberholtzer.
Vinita	5,010	M. R. Floyd.
Wagoner	3,436	James O. Crook.
Walters	3,032	Jno. H. Andrews.
Waurika	3,204	J. W. Shipp.
Woodward	3,849	E. H. Homberger.
Wynona	2,749	Harry D. Simmons.
Yale	2,601	S. C. Herrin.
OREGON.		
Albany	4,840	C. W. Boetticher.
Ashland	4,283	George A. Briscoe.
Astoria	14,027	Arthur C. Strange.
Baker	7,729	Prentiss Brown.
Bend	5,415	S. W. Moore.
Corvallis	5,752	J. O. McLaughlin.
Dallas	2,701	R. R. Turner.
Eugene	10,593	E. F. Carleton.
Grants Pass	3,151	W. J. Mishler.
Hood River	3,195	Arthur M. Cannon.
Klamath Falls	4,801	J. Percy Wells.
La Grande	6,913	A. C. Hampton.
McMinnville	2,767	Omar N. Bittner.
Marshfield	4,034	C. A. Howard.
Medford	5,756	Aubrey G. Smith.
Newberg	2,566	A. C. Stanbrough.
North Bend	3,268	G. A. Ruring.
OREGON—contd.		
Oregon City	5,686	R. W. Kirk.
Pendleton	7,387	H. E. Inlow.
Portland	258,288	D. A. Grout.
Roseburg	4,381	M. S. Hamm.
Salem	17,679	George W. Hug.
The Dalles	5,807	R. L. Kirk.
PENNSYLVANIA.		
Aliquippa	2,931	A. D. Dungan.
Allentown	[3] 76,051	H. W. Dodd.
Altoona	60,331	S. H. Layton.
Ambler	3,094	J. M. Fisher.
Ambridge	12,730	Charles S. McVay.
Apollo	3,227	J. D. Boydston.
Archbald	8,603	W. A. Kelly.
Arnold	6,120	D. F. Detter.
Ashland	6,666	Edward W. Taylor.
Ashley	6,520	A. P. Cope.
Aspinwall (P. O., Pittsburgh).	3,170	F. D. Keboch.
Athens	4,384	R. G. Witmer.
Avalon (P. O., Pittsburgh).	5,277	S. Todd Perley.
Avoca	4,950	Charles B. Webber.
Bangor	5,402	John W. Gruver.
Barnesboro	4,183	E. D. Ott.
Beaver	4,135	John H. Eisenhaver.
Beaver Falls	12,802	Floyd Atwell.
Bellefonte	3,996	Arthur H. Sloop.
Bellevue	8,198	T. E. Garber.
Bellwood	2,629	F. A. Hamilton.
Bentleyville	3,679	C. C. Pearsall.
Berwick	12,181	M. E. Houck.
Bethlehem	50,358	James N. Muir.
Birdsboro	3,299	C. E. Cole.
Blairsville	4,391	H. E. Seville.
Blakely (P. O., Peckville).	6,564	H. B. Anthony.
Bloomsburg	7,819	L. Parvin Sterner.
Boyertown	3,189	Geo. B. Swinehart.
Brackenridge	4,987	Robert R. Anderson.
Braddock	20,879	T. G. McCleary.
Bradford	15,525	James F. Butterworth.
Bridgeport	4,680	H. E. James.
Bridgeville	3,092	W. M. Edwards.
Bristol	10,273	Louise D. Baggs.
Brookville	3,272	C. E. Wilson.
Brownsville	2,502	Jesse Coldren.
Burnham	2,765	Elmer E. Sipe.
Butler	23,778	Jno. A. Gibson.
Canonsburg	10,632	F. W. McVay.
Carbondale	18,640	Evan J. Lewis.
Carlisle	10,916	John C. Wagner.
Carnegie	11,516	Thomas J. George.
Carrick (P. O., Pittsburgh).	10,504	Wm. H. Sprenkle.
Catasauqua	4,714	H. J. Reinhard.
Centerville	4,793	Mary Kane.
Chambersburg	13,171	U. L. Gordy.
Charleroi	11,516	Thomas L. Pollock.
Chester	58,030	Charles A. Wagner.
Clairton	6,264	F. N. Frits.
Clarion	2,793	C. A. Middleswarth.
Clearfield	8,529	Geo. E. Zerfoss.
Clifton Heights	3,469	Sarah Edwards.
Clymer	2,867	D. L. Winger.
Coaldale	6,336	John E. Gildea.
Coatesville	14,515	H. R. Vanderslice.
College Hill (P. O., Beaver Falls).	2,643	W. G. Lambert.
Collingdale (P. O., Darby).	3,834	S. Ella Stern.

[3] Includes South Allentown borough, population 2,546

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IV.—Superintendents of Public Schools in Cities and Towns—Continued.

City.	Population, census of 1920.	Superintendent or supervising principal.
PENNSYLVANIA—continued.		
Columbia	10,836	Wm. C. Sampson.
Connellsville	13,804	Bella B. Smith.
Conshohocken	8,481	C. S. Hottenstein.
Coplay	2,845	William Shetlock.
Corsopolis	6,162	J. C. Werner.
Corry	7,228	A. Earle Hemstreet.
Coudersport	2,836	George A. Retan.
Crafton	5,954	Calvin Bowman.
Curwensville	2,973	Grant Norris.
Dale (P. O., Johnstown).	3,115	J. T. Ruhl.
Danville	6,952	D. N. Dieffenbacher.
Darby	7,922	Amos Chamberlain.
Derry	2,889	James C. Bryson.
Dickson City	11,049	P. M. Brennan.
Donora	14,131	Thos. M. Gilland.
Dormont (P. O., Pittsburgh).	6,455	Ralph Radcliffe.
Dorranceton (P. O., Wilkes-Barre).	6,334	C. B. Hanyon, jr.
Donningtown	4,024	A. B. Moyer.
Doylestown	3,837	Carmon Ross.
Dubois	13,681	T. T. Allen.
Dunmore	20,250	C. F. Hoban.
Dupont (P. O., Avoca).	4,576	Miss K. Brown.
Duquesne	19,011	C. H. Walford.
Duryea	7,776	A. C. Lutz.
East Conemaugh (P. O., Conemaugh).	5,256	J. M. Uhler.
East Mauch Chunk.	3,868	Owen E. Batt.
Easton	33,813	Robert E. Laramy.
East Pittsburgh	6,527	Melvin C. Harner.
East Stroudsburg	4,855	Chas. A. Goss.
Eddystone (P. O., Chester).	2,670	Lydia Griswell.
Edgewood (P. O., Pittsburgh).	3,181	R. C. McElfish.
Edwardsville (P. O., Kingston).	9,027	J. O. Herman.
Elizabeth	2,703	D. R. Douglass.
Elizabethtown	3,319	S. A. Conway.
Ellsworth	2,828	Mrs. Marion S. McDowell.
Ellwood City	8,958	C. F. Becker.
Emaus	4,370	Howard J. Yeager.
Emporium	3,036	J. Milton Lord.
Ephrata	3,735	H. E. Gehman.
Erie	93,372	Ira B. Bush.
Etna (P. O., Pittsburgh).	6,341	Wm. M. Stewart.
Exeter (P. O., Pittston).	4,176	Elizabeth Dougher.
Export	2,596	George F. Long.
Farrell	15,586	Port Eckles.
Ford City	5,605	R. D. Welch.
Forest City	6,004	E. E. Jones.
Forty Fort (P. O., Kingston).	3,389	A. A. Killian.
Frackville	5,590	William R. Trautman.
Franklin [4]	9,970	C. E. Carter.
Franklin [5] (P. O., Conemaugh).	2,632	Everett E. Custer.
Freedom	3,452	F. A. Barkley.
Freeland	6,666	N. P. Luckenbill.
Freeport	2,696	H. H. Elliott.
Galeton	2,969	D. E. Courtney.
Gallitzen	3,580	R. H. Biter.
PENNSYLVANIA—continued.		
Gettysburg	4,439	Thomas S. March.
Gilberton	4,766	C. A. Burke.
Girardville	4,482	Herbert S. Rausch.
Glassport	6,959	John S. Hart.
Greensburg	15,033	Thos. S. March.
Greenville	8,101	G. B. Gerberich.
Grove City	4,944	H. M. B. Lehn.
Hamburg	2,764	John N. Land.
Hanover	8,664	A. J. English.
Harrisburg	75,917	Frederick E. Downes.
Hazleton	32,277	A. D. Thomas.
Hellertown	3,008	Robert N. Taylor.
Hollidaysburg	4,071	H. J. Barrett.
Homestead	20,452	Landis Tanger.
Honesdale	2,756	J. J. Koehler.
Hummelstown	2,654	T. O. Mitman.
Huntingdon	7,051	E. R. Barclay.
Indiana	7,043	F. Ernest Work.
Ingram (P. O., Pittsburgh).	2,900	M. A. Steiner.
Irwin	3,235	Samuel Fausold.
Jeannette	10,627	E. W. Long.
Jenkintown	3,366	Dale S. Barton.
Jermyn	3,326	H. H. Rounds.
Jersey Shore	6,103	J. G. Dundore.
Johnsonburg	5,400	S. M. Robb.
Johnstown	67,327	H. J. Stockton.
Juniata	7,660	M. B. Wineland.
Kane	7,283	H. O. Dietrick.
Kingston	8,952	J. R. Merkel.
Kittanning	7,153	Clyde W. Cranmer.
Knoxville (P. O., Mount Oliver).	7,201	Milo H. Miller.
Kulpmont	4,695	J. A. Shovlin.
Kutztown	2,684	Harry B. Yoder.
Lancaster	53,150	H. B. Work.
Lansdale	4,728	J. Walter Gapp.
Lansdowne	4,797	Walter L. Phillips.
Lansford	9,625	E. E. Kuntz.
Larksville (P. O., Wilkes-Barre).	9,438	M. L. McCann.
Latrobe	9,484	Charles S. Miller.
Lebanon	24,643	E. M. Balsbaugh.
Leechburg	3,991	S. M. Neagley.
Lehighton	6,102	B. M. Shull.
Lewisburg	3,204	Harry S. Bourne.
Lewistown	9,849	W. A. Hutchison.
Lititz	3,680	I. Clement Mummert.
Lock Haven	8,557	N. P. Benson.
Luzerne	5,998	T. G. Osborne.
Lykens	2,880	J. H. Gaskins.
McAdoo	4,674	Sallie Ferry.
McDonald	2,751	William L. Moore.
McKeesport	46,781	J. B. Richey.
McKees Rocks	16,713	T. K. Johnston.
Mahanoy City	15,599	H. A. Oday.
Manheim	2,712	
Marcus Hook	5,324	H. C. Sabold.
Mauch Chunk	3,666	E. P. Heckert.
Mayfield	3,832	Anna L. McCarthy.
Meadville	14,568	W. W. Irwin.
Mechanicsburg	4,688	Ralph Jacoby.
Media	4,109	Wm. H. Micheals.
Meyersdale	3,716	D. H. Bauman.
Middletown	5,920	H. J. Wickey.
Midland	5,452	Frank C. Ketler.
Millersburg	2,936	J. F. Adams.
Millvale	8,031	C. C. Williamson.
Milton	8,638	Carl L. Millward.
Miners Mills (P. O., Wilkes-Barre).	4,365	Michael A. Toole.

[4] City. [5] Borough.

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IV.—Superintendents of Public Schools in Cities and Towns—Continued.

City.	Population, census of 1920.	Superintendent or supervising principal.
PENNSYLVANIA—continued.		
Minersville	7,845	C. E. Roudabush.
Monaca	3,838	L. C. French.
Monessen	18,179	H. E. Gress.
Monongahela	8,688	Renwick G. Dean.
Moosic	4,364	C. E. Drumm.
Morrisville	3,639	Clement C. Callin.
Mount Carmel	17,469	W. M. Yeingst.
Mount Oliver	5,575	Minnie Ubinger.
Mount Pleasant	5,862	John C. Haberlen.
Mount Union	4,744	C. C. Smith.
Munhall	6,418	Charles R. Stone.
Nanticoke	22,614	A. P. Diffendafer.
Nanty Glo	5,028	H. C. Salsgiver.
Narberth	3,704	George H. Wilson.
Nazareth	4,288	F. A. Marcks.
New Brighton	9,361	S. W. Lyons.
New Castle	44,938	Ben G. Graham.
New Kensington	11,987	Berlin Empfield.
New Philadelphia (P. O., Silver Creek).	2,537	George Melevage.
Norristown	32,319	A. S. Martin.
Northampton	9,349	William D. Landis.
North Bellevernon (P. O., Belle Vernon).	2,605	John H. Linn.
North Braddock (P. O., Braddock).	14,928	H. G. Means.
North East	3,481	W. J. McQuiston.
Northumberland	4,061	C. H. Fisher.
Oakmont	4,512	W. Lee Gilmore.
Oil City	21,274	James J. Palmer.
Old Forge	12,237	Francis R. Coyne.
Olyphant	10,236	M. W. Cummings.
Osceola	2,512	Burr Hall.
Palmerton	7,168	B. Frank Rosenberry.
Palmyra	3,646	C. F. Harnish.
Parkesburg	2,513	Lloyd L. Coil.
Parnassus	3,816	W. Ray Smith.
Parsons	5,628	E. A. Evans.
Patton	3,628	Wm. Bosserman.
Pen Argyl	4,006	William E. Muth.
Perkasie	3,150	L. H. Wagenhorst.
Philadelphia	1,823,779	Edwin C. Broome.
Philipsburg	3,900	C. V. Erdly.
Phoenixville	10,484	Isaac Doughton.
Pitcairn	5,738	C. W. Peters.
Pittsburgh	588,343	Wm. M. Davidson.
Pittston	18,497	D. J. Cray.
Plymouth	16,500	S. L. Smith.
Polk	2,662	W. Clyde Richey.
Portage	4,804	R. B. Beard.
Port Carbon	2,882	Ira A. Goss.
Port Vue (P. O., McKeesport).	2,538	A. E. Leffler.
Pottstown	17,431	W. W. Rupert.
Pottsville	21,876	George H. Weiss.
Prospect Park (P. O., Moores).	2,536	B. H. Johnson.
Punxsutawney	10,311	F. S. Jackson.
Quakertown	4,391	Carl G. Leech.
Rankin (P. O., Braddock).	7,301	C. L. Wilson.
Reading	107,784	Charles S. Foos.
Red Lion	3,198	William H. Ott.
Renovo	5,877	F. A. Berkenstock.
Reynoldsville	4,116	M. H. Deardorff.
Ridgway	6,037	W. M. Peirce.
Rochester	6,957	S. R. Grimm.
Royersford	3,278	J. A. Uhland.
St. Clair (P. O., Mount Oliver).	6,585	Alice Milligan.
St. Clair (Schuylkill County).	6,495	T. G. Jones.
St. Marys	6,967	J. J. Lynch.
Sayre	8,078	L. E. De Laney.
Schuylkill Haven	5,437	Allan F. Bubeck.
Scottdale	5,768	J. N. Waugaman.
Scranton	137,783	S. E. Weber.
Sewickley	4,955	Geo. E. Mark.
Shamokin	21,204	Joseph Howerth.
Sharon	21,747	W. D. Gamble.
Sharpsburg	8,921	John J. Donovan.
Sharpsville	4,674	Wm. M. Johnston.
Shenandoah	24,726	J. W. Cooper.
Shippensburg	4,372	A. Lee Shulenberger.
Slatington	4,014	J. W. Snyder.
Somerset	3,121	F. F. Foltz.
Souderton	3,125	A. L. Gehman.
South Brownsville	4,675	A. M. Jarman.
South Fork	4,239	Philip J. Lent.
Southwest Greensburg (P. O., Greensburg).	2,538	Charles E. Marsh.
South Williamsport (P. O., Williamsport).	4,341	A. B. Elder.
Spangler	3,035	T. J. Sullivan.
Spring City	2,944	Werner E. De Turck.
Springdale	2,929	H. Frank Hare.
Steelton	13,428	Chas. S. Davis.
Stroudsburg	5,278	Robert Brown, jr.
Sugar Notch	2,612	O. L. Lenahan.
Summit Hill	5,499	E. T. McCready.
Sunbury	15,721	W. A. Gessey.
Susquehanna Depot.	3,764	James A. Bowles.
Swissvale	10,908	C. C. Kelso.
Swoyerville (P. O., Wilkes-Barre).	6,876	Joseph H. Finn.
Sykesville	2,507	Coy N. Shellits.
Tamaqua	12,363	J. F. Derr.
Tarentum	8,925	A. D. Endsley.
Taylor	9,876	Wm. S. Robinson.
Throop (P. O., Olyphant).	6,672	John J. O'Hara.
Titusville	8,432	Henry Pease.
Towanda	4,269	Everett A. Quackenbush.
Trafford	2,859	S. L. Topper.
Turtle Creek	8,138	W. A. Rodgers.
Tyrone	9,084	W. W. Eisenhart.
Union City	3,850	H. H. Denison.
Uniontown	15,692	J. H. Alleman.
Vandergrift	9,531	Charles H. Omo.
Verona	3,998	U. G. Palmer.
Warren	14,272	R. T. Adams.
Washington	21,480	J. C. Stuers.
Waynesboro	9,720	J. Clair McCullough.
Waynesburg	3,332	R. M. Archibald.
Wellsboro	3,452	Rock L. Butler.
West Chester	11,717	Addison L. Jones.
West Hazleton	5,854	Ernest Encke.
West Homestead (P. O., Homestead).	3,435	F. L. Rose.
West Newton	2,645	Claude Mitchell.
West Pittston (P. O., Pittston).	6,968	L. P. Bierly.
West Reading (P. O., Reading).	2,921	William S. Delp.
Westview (P. O., Pittsburgh).	2,797	H. N. Hennon.
West York (P. O., York).	3,320	
Wilkes-Barre	73,833	H. H. Zeiser.
Wilkinsburg	24,403	James L. Allison.
Williamsport	36,198	F. W. Robbins.

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IV.—Superintendents of Public Schools in Cities and Towns—Continued.

City.	Population, census of 1920.	Superintendent or supervising principal.
PENNSYLVANIA—continued.		
Williamstown	2,878	H. C. Snyder.
Wilmerding	6,441	Chas. W. Shaffer.
Wilson	3,243	C. H. Keibler.
Windber	9,462	W. C. Crawford.
Winton	7,583	John J. Judge.
Woodlawn	12,495	O. H. Locke.
Wyoming	3,582	John E. Piatt.
York	47,512	A. Wanner.
RHODE ISLAND.		
Barrington	3,897	Charles H. Keyes.
Bristol	11,375	William C. Hobbs.
Burrillville (P. O., Harrisville).	8,606	J. C. Sweeney.
Central Falls	24,174	Robert K. Bennett.
Coventry	5,670	John H. Bailey, jr.
Cranston (P. O., Providence).	29,407	John K. Fenner.
Cumberland (P. O., Valley Falls).	10,077	Irving C. Mitchell.
East Greenwich	3,290	I. C. Phillips.
East Providence	21,793	James R. D. Oldham.
Johnston (P. O., Providence).	6,855	Lofton L. Dudley.
Lincoln (P. O., Lonsdale).	9,543	John L. Smith.
Newport	30,255	Herbert W. Lull.
North Kingstown (P. O., Davisville).	3,397	Henry M. Walradt.
North Providence (P. O., Providence).	7,697	William J. Harper.
North Smithfield (P. O., Woonsocket).	3,200	Phoebe Hendrick (asst.).
Pawtucket	64,248	Frank O. Draper.
Portsmouth	2,590	Isabella G. Chase.
Providence	237,595	Isaac O. Winslow.
Scituate (P. O., North Scituate).	3,006	E. P. Colson.
Smithfield (P. O., Centerdale).	3,199	Clovis W. Mitchell.
South Kingstown (P. O., Kingston).	5,181	Wm. A. Brady.
Tiverton	3,894	Louis M. Wagen.
Warren	7,841	Leroy G. Staples.
Warwick	13,481	William F. Miner.
Westerly	9,952	Willard H. Bacon.
West Warwick (P. O., River Point).	15,461	John F. Deering.
Woonsocket	43,496	Wendell A. Mowry.
SOUTH CAROLINA.		
Abbeville	4,570	James D. Fulp.
Aiken	4,103	W. J. McGarity.
Anderson	10,570	E. C. McCants.
Batesburg	2,848	W. F. Scott.
Beaufort	2,831	George H. Webber.
Bennettsville	3,197	K. D. Senn.
Camden	3,930	John G. Richards, jr.
Charleston	67,957	A. B. Rhett.
Cheraw	3,150	J. K. McCown.
Chester	5,557	M. E. Brockman.
Clinton	3,767	J. H. Witherspoon.
Columbia	37,524	W. H. Hand.
Darlington	4,669	J. C. Daniel.
Easley	3,568	J. V. McElveen.
Eau Claire (P. O., Columbia).	2,566	Maurice Alcorn.
Florence	10,968	Edwin C. Wade.
Gaffney	5,065	W. C. Taylor.
Georgetown	4,579	Wm. C. Bynum.
SOUTH CAROLINA—continued.		
Greenville	23,127	J. L. Mann.
Greenwood	8,703	W. E. Black.
Hartsville	3,624	J. H. Thornwell.
Lancaster	3,032	Holmes H. Scott.
Laurens	4,629	H. W. Gasque.
Marion	3,892	T. C. Easterling.
Newberry	5,894	O. B. Cannon.
Orangeburg	7,290	A. J. Thackston.
Rock Hill	8,809	R. C. Burts.
Spartanburg	22,638	Frank Evans.
Summerville	2,550	Jas. H. Spann.
Sumter	9,508	S. H. Edmunds.
Union	6,141	Davis Jeffries.
Yorkville (P. O., York).	2,731	E. A. Montgomery.
SOUTH DAKOTA.		
Aberdeen	14,537	Jos. T. Glenn.
Brookings	3,924	S. W. Johnson.
Huron	8,302	David E. Cloyd.
Lead	5,013	O. C. Prichard.
Madison	4,144	Clarence E. Nickle.
Mitchell	8,478	J. C. Lindsey.
Mobridge	3,517	W. R. Van Walker.
Pierre	3,209	R. E. Rawlins.
Rapid City	5,777	*Amos Groethe.
Redfield	2,755	G. W. Crossman.
Sioux Falls	25,202	A. A. McDonald.
Vermilion	2,590	J. S. Bjornson.
Watertown	9,400	T. A. Harmon.
Yankton	5,024	Henry Buellesfield.
TENNESSEE.		
Alcoa	3,358	V. T. Hultquist.
Alton Park	3,020	F. H. Trotter.
Athens	2,580	J. C. Ridenour.
Bristol	8,047	R. B. Rubins.
Brownsville	3,062	C. W. Anderson.
Chattanooga	57,895	J. S. Ziegler.
Clarksville	8,110	A. J. Smith.
Cleveland	6,522	R. T. Allen.
Columbia	5,526	R. L. Harris.
Covington	3,410	W. A. Bass.
Dyersburg	6,444	L. Jere Cooper.
East Chattanooga	4,720	J. L. Hair.
Elizabethtown	2,749	A. Watson Carmack.
Erwin	2,965	D. M. Laws.
Etowah	2,516	F. H Carey.
Fayetteville	3,629	B. D. Johnson.
Franklin	3,123	A. J. Haun.
Gallatin	2,757	Claude Lowry.
Greenville	3,775	A. C. Duggins.
Harriman	4,019	P. D. Neilson.
Humboldt	3,913	R. E. Bright.
Jackson	18,860	C. B. Ijams.
Johnson City	12,442	D. R. Haworth.
Kingsport	5,692	S. W. Gentry.
Knoxville	77,818	W. E. Miller.
La Follette	3,056	Pat W. Kerr.
Lebanon	4,084	W. Lee Harris.
Lenoir City	4,210	J. H. Jarvis.
Lewisburg	2,711	J. G. Stinson.
McMinnville	2,814	E. L. Newman.
Martin	2,837	Eph. P. Smith.
Maryville	3,739	Claude D. Curtis.
Memphis	162,351	Wharton S. Jones.
Morristown	5,875	C. C. Sherrod.
Murfreesboro	5,367	J. C. Mitchell.
Nashville	118,342	H. C. Weber.
Newport	2,753	Allen D. Justus.
Paris	4,730	M. M. Phillips.
Pulaski	2,780	Annie L. Hu[illegible]
Rockwood	4,652	N. A. Steadm[illegible]
St. Elmo	3,900	
Shelbyville	2,912	J. C. Goodri[illegible]
Springfield	3,860	W. P. Mort[illegible]
Tracy City	2,609	S. D. Maddi[illegible]

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IV.—Superintendents of Public Schools in Cities and Towns—Continued.

City.	Population, census of 1920.	Superintendent or supervising principal.
TENNESSEE—con.		
Trenton	2,751	J. M. DeBow.
Tullahoma	3,479	D. Henry Piper.
Union City	4,412	F. E. Ranck.
TEXAS.		
Abilene	10,274	R. D. Green.
Amarillo	15,494	M. H. Duncan.
Arlington	3,031	J. A. Kooken.
Athens	3,176	J. J. Montgomery.
Austin	34,876	Arthur N. McCallum
Ballinger	2,767	J. M. Skinner.
Bay City	3,454	B. F. Phelps.
Beaumont	40,422	M. E. Moore.
Beeville	3,063	W. E. Madderra.
Belton	5,098	L. H. Hubbard.
Big Spring	4,273	A. W. Flaniken.
Bonham	6,008	L. H. Rather.
Bowie	3,179	T. P. Walker.
Brenham	5,066	Joseph C. Tucker.
Brownsville	11,791	T. J. Yoe.
Brownwood	8,223	Geo. W. Page.
Bryan	6,307	Madison Hall.
Burkburnett	5,300	E. J. Woodward.
Cameron	4,298	L. H. Kidd.
Childress	5,003	B. M. Harrison.
Cisco	7,422	J. J. Godbey.
Clarksville	3,386	R. M. White.
Cleburne	12,820	Emmett Brown.
Coleman	2,868	C. H. Hufford.
Comanche	3,524	J. B. Layne.
Commerce	3,842	A. L. Day.
Cooper	2,563	J. H. Newton.
Corpus Christi	10,522	R. T. Pritchett.
Corsicana	11,356	H. D. Fillers.
Crockett	3,061	Donald McDonald.
Cuero	3,671	A. S. Bush.
Dalhart	2,676	James H. Hayes.
Dallas	158,976	Justin F. Kimball.
De Leon	3,302	J. O. Milstead.
Del Rio	10,589	W. D. Notley.
Denison	17,065	F. B. Hughes.
Denton	7,626	W. T. Doggett.
Desdemona	3,008	G. D. Holbrook.
Dublin	3,229	S. L. Wolfe.
Eagle Pass	5,765	G. B. M. Snyder.
Eastland	9,368	C. A. Peterson.
Electra	4,744	B. M. Dinsmore.
El Paso	77,560	A. H. Hughey.
Ennis	7,224	J. W. O'Banion.
Fort Worth	106,482	Milton H. Moore.
Gainesville	8,648	C. A. Puckett.
Galveston	44,255	John W. Hopkins.
Georgetown	2,871	H. L. Egger.
Gonzales	3,128	K. A. Jones.
Gorman	3,200	W. C. Nunnally.
Graham	2,544	H. B. Cogdell.
Greenville	12,384	L. C. Gee.
Hearne	2,741	D. M. Major.
Henrietta	2,563	C. F. Walker.
Hillsboro	6,952	W. T. Lofland.
Honey Grove	2,642	L. F. Connell.
Houston	138,276	R. B. Cousins.
Huntsville	4,689	C. G. Green.
Jacksonville	3,723	H. T. Brown.
Jefferson	2,549	C. E. Farmer.
Kaufman	2,501	O. P. Norman.
Kingsville	4,770	
Laredo	22,710	L. J. Christen.
Lockhart	3,731	J. C. Cochran.
Longview	5,713	W. F. Garner.
Lubbock	4,051	M. M. Dupre.
Lufkin	4,878	I. A. Coston.
McAllen	5,331	Ed. R. Bentley.
McKinney	6,677	J. S. Carlisle.
Magnolia Park (P. O., Houston)	4,080	C. E. Barrick.
TEXAS—contd.		
Marfa	3,553	J. E. Conner.
Marlin	4,310	A. C. Ferguson.
Marshall	14,271	J. P. Glasgow.
Mart	3,105	J. J. Youngblood.
Memphis	2,839	D. R. Hibbetts.
Mercedes	3,414	Nannie Mer Buck.
Mexia	3,482	James F. Johnson.
Mineral Wells	7,890	R. A. Deen.
Mission	3,847	S. L. Hardin.
Mount Pleasant	4,099	P. E. Wallace.
Nacagdoches	3,546	R. F. Davis.
Navasota	5,060	L. G. Andrews.
New Braunfels	3,590	R. H. Marrs.
Orange	9,212	E. B. Stover.
Palestine	11,039	Bonner Frizzell.
Paris	15,040	J. G. Wooten.
Pittsburg	2,540	W. S. Fleming.
Plainview	3,989	W. E. Patty.
Polytechnic	4,338	R. C. East.
Port Arthur	22,251	G. M. Sims.
Quanah	3,691	C. E. Davis.
Ranger	16,205	E. O. McNew.
San Angelo	10,050	Felix E. Smith.
San Antonio	161,379	Jeremiah Rhodes.
San Benito	5,070	J. H. Head.
San Marcos	4,527	E. M. Day.
Seguin	3,631	Joe F. Saegert.
Sherman	15,031	J. C. Pyle.
Smithville	3,204	R. C. Campbell.
Sour Lake	3,032	J. G. Fuqua.
Stamford	3,704	N. S. Holland.
Stephenville	3,891	J. D. Bramlette.
Sulphur Springs	5,558	W. L. Willis.
Sweetwater	4,307	J. G. Chapman.
Taylor	5,965	J. E. Watts.
Teague	3,306	Llewellyn Notley.
Temple	11,033	L. C. Procter.
Terrell	8,349	B. H. Miller.
Texarkana	11,480	H. W. Stilwell.
Texas City	2,509	Levi Fry.
Tyler	12,085	G. O. Clough.
Uvalde	3,885	A. W. Evans.
Vernon	5,142	E. L. Dohoney.
Victoria	5,957	Virgil L. Griffin.
Waco	38,500	B. B. Cobb.
Waxahachie	7,958	G. B. Winn.
Weatherford	6,203	T. W. Stanley.
Wichita Falls	40,079	Lee Clark.
Yoakum	6,184	R. E. L. Adams.
UTAH.		
American Fork	2,763	P. M. Nielsen.
Bingham Canyon	2,676	Lars. W. Nielsen.
Brigham	5,282	C. H. Skidmore.
Eureka	3,608	I. L. Williamson.
Lehi	3,078	David R. Mitchell.
Logan	9,439	Orson Ryan.
Murray	4,584	C. E. Gaufin.
Nephi	2,603	Ray Stewart.
Ogden	32,804	W. Karl Hopkins.
Park City	3,393	J. L. Kearns.
Payson	3,031	
Provo	10,303	H. A. Dixon.
Richfield	3,262	A. J. Ashman.
Salt Lake City	118,110	G. N. Child.
Spanish Fork	4,036	L. John Nuttall.
Springville	3,010	
Tooele	3,602	E. M. Reid.
VERMONT.		
Barre (city)	10,008	Carroll H. White.
Barre (town)	3,862	Waldo F. Glover.
Barton	3,506	Carl J. Batchelder.
Bennington	7,230	D. W. McClelland.
Brandon	2,874	William L. Coggins.

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IV.—Superintendents of Public Schools in Cities and Towns—Continued.

City.	Population, census of 1920.	Superintendent or supervising principal.
VERMONT--contd.		
Brattleboro	8,332	Florence M. Wellman.
Burlington	22,779	Merritt D. Chittenden.
Fair Haven	2,540	Philip N. Leavenworth.
Hardwick	2,641	C. L. Cowles.
Hartford	4,739	Clarence L. Jay.
Lyndon	3,558	Martin E. Daniels.
Middlebury	2,914	Arthur W. Eddy.
Montpelier	7,125	Sherburn C. Hutchinson.
Morristown (P. O., Morrisville).	2,813	Carlton D. Howe.
Newport	4,976	E. A. Hamilton.
Northfield	3,096	Charles P. McKnight
Poultney	2,868	R. Rising Morrow.
Proctor	2,789	Kenneth J. Sheldon.
Randolph	3,010	George W. Patterson
Richford	2,842	E. F. Greene.
Rockingham (P. O., Bellows Falls).	6,231	C. L. Erwin.
Rutland	14,954	W. W. Fairchild.
St. Albans	7,588	George S. Wright.
St. Johnsbury	8,708	Clarence C. Hitchcock.
Springfield	7,202	Herbert D. Casey.
Swanton	3,343	Homer E. Hunt.
Waterbury	3,542	Merle H. Willis.
West Rutland	3,391	Philip R. Leavenworth.
Windsor	3,687	E. K. Boak.
Winooski	4,932	George R. Stackpole.
VIRGINIA.		
Abingdon	2,532	J. R. Mort.
Alexandria	18,060	W. H. Sweeney.
Bedford	3,243	J. L. Borden.
Big Stone Gap	3,009	H. L. Sulfridge.
Bristol	6,729	Roy B. Bowers.
Buena Vista	3,911	J. P. McCluer.
Cape Charles	2,517	D. W. Peters.
Charlottesville	10,688	James G. Johnson.
Clifton Forge	6,164	R. C. Bowton.
Covington	5,623	J. G. Jeter.
Danville	21,539	T. H. Wheatley.
Farmville	2,586	M. B. Dickinson.
Fredericksburg	5,882	E. F. Birckhead.
Graham	2,752	H. J. Meredith.
Hampton	6,138	J. H. Brent.
Harrisonburg	5,875	W. H. Keister.
Lexington	2,870	Harrington Waddell.
Lynchburg	30,070	E. C. Glass.
Marion	3,253	B. E. Copenhaver.
Martinsville	4,075	Roy Webster.
Newport News	35,596	Joseph H. Saunders.
Norfolk	115,777	Richard A. Dobie.
Norton	3,068	J. I. Burton.
Petersburg	31,012	Frank M. Martin.
Phoebus	3,043	Elfred Forrest.
Pocahontas	2,591	John H. Crowgey.
Portsmouth	54,387	Harry A. Hunt.
Pulaski	5,282	J. C. Elliott.
Radford	4,627	W. K. Barnett.
Richmond	171,667	Albert H. Hill.
Roanoke	50,842	D. E. McQuilkin.
Salem	4,159	Roland E. Cook.
South Boston	4,338	H. J. Watkins.
South Norfolk (P. O., Norfolk).	7,724	G. C. Outland.
Staunton	10,623	G. L. H. Johnson.
Suffolk	9,123	Jno. E. Martin.
Vinton	2,779	H. A. Prillaman.
VIRGINIA—contd.		
Winchester	6,883	F. E. Clerk.
Wytheville	2,947	J. A. C. Hurt.
WASHINGTON.		
Aberdeen	15,337	George B. Miller.
Anacortes	5,284	Robert M. Fulton.
Auburn	3,163	J. W. Failor.
Bellingham	25,585	D. E. Wiedman.
Bremerton	8,918	V. D. Goss.
Centralia	7,549	E. T. Robinson.
Charleston	3,338	W. L. Selby.
Chehalis	4,558	R. E. Cook.
Cle Elum	2,661	Eugene D. Merriman.
Colfax	3,027	J. O. Mattoon.
Dayton	2,695	L. L. Nolin.
Ellensburg	3,967	H. B. Doolittle.
Everett	27,644	Arthur Wilson.
Hillyard	3,942	W. C. Arterburn.
Hoquiam	10,058	F. E. Schmidtke.
Medical Lake	2,545	A. K. Millay.
Mount Vernon	3,341	C. A. Nelson.
Olympia	7,795	Elmer L. Breckner.
Pasco	3,362	C. H. Lillie.
Port Angeles	5,351	Charles Briffett.
Port Townsend	2,847	H. R. Taylor.
Puyallup	6,323	W. M. Gambill.
Raymond	4,260	Roy W. Glass.
Renton	3,301	Frank S. Salisbury.
Roslyn	2,673	W. G. Whitfield.
Seattle	315,312	Frank B. Cooper.
Sedro-Woolley	3,389	H. C. Crumpacker.
Snohomish	2,985	George C. Howard.
Spokane	104,437	O. C. Pratt.
Tacoma	96,965	Wm. F. Geiger.
Toppenish	3,120	George Fields.
Vancouver	12,637	C. W. Shumway.
Walla Walla	15,503	W. M. Kern.
Wenatchee	6,324	G. M. Warren.
Yakima	18,539	A. C. Davis.
WEST VIRGINIA.		
Beckley	4,149	Andrew J. Peters.
Benwood	4,773	F. R. Hanifan.
Bluefield	15,282	M. P. Shawkey.
Buckhannon	3,785	Walter R. Grose.
Charleston	39,608	George S. Laidley.
Charles Town	2,527	Wright Denny.
Chester	3,283	W. W. Robinson.
Clarksburg	27,869	J. A. Jackson.
Elkins	6,788	W. W. Trent.
Fairmont	17,851	Otis G. Wilson.
Follansbee	3,135	A. F. Young.
Grafton	8,517	L. W. Burns.
Hinton	3,912	F. H. Tomkies.
Huntington	50,177	C. L. Wright.
Keyser	6,003	J. C. Sanders.
Logan	2,998	F. O. Woerner.
McMechen	3,356	J. T. King.
Mannington	3,673	D. C. Tabler.
Martinsburg	12,515	William C. Morton.
Morgantown	12,127	Roy C. Smith.
Moundsville	10,669	John C. Shreve.
Parkersburg	20,050	H. E. Odgers.
Piedmont	2,835	F. A. Yoke.
Point Pleasant	3,059	A. T. Stanforth.
Princeton	6,224	Wilford McCutcheon
Richwood	4,331	H. A. Rice.
St. Albans	2,825	D. D. Riley.
Salem	2,920	Boyd Randal.
Sistersville	3,238	R. B. Marston.
South Charleston	3,650	C. H. Gregory.
Welch	3,232	L. J. Hanifan.

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IV.—Superintendents of Public Schools in Cities and Towns—Continued.

City.	Population, census of 1920.	Superintendent or supervising principal.
WEST VIRGINIA—continued.		
Wellsburg	4,918	W. N. Beetham.
Weston	5,701	Frank R. Yoke.
Wheeling	56,208	C. E. Githens.
Williamson	6,819	A. C. Davis.
WISCONSIN.		
Antigo	8,451	R. A. Brandt.
Appleton	19,561	Carrie E. Morgan.
Ashland	11,334	I. O. Hubbard.
Baraboo	5,538	A. C. Kingsford.
Beaver Dam	7,992	George R. Ray.
Beloit	21,284	F. E. Converse.
Berlin	4,400	C. D. Lamberton.
Burlington	3,626	Fred L. Witter.
Chippewa Falls	9,130	H. N. Goddard.
Clintonville	3,275	F. D. Wartinbee.
Cudahy	6,725	Jesse F. Cory.
Delavan	3,016	H. A. Melcher.
De Pere	5,165	A. L. Simon.
Eau Claire	20,906	William T. Darling.
Edgerton	2,688	Fred J. Holt.
Fond du Lac	23,427	R. W. Fairchild.
Fort Atkinson	4,915	Frank C. Bray.
Green Bay	31,017	A. W. Burton.
Hartford	4,515	Arthur Schubert.
Hudson	3,014	D. T. John.
Hurley	3,188	J. E. Murphy.
Janesville	18,293	F. O. Holt.
Jefferson	2,572	Earl C. MacInnis.
Kaukauna	5,951	Leo G. Schussman.
Kenosha	40,472	G. F. Loomis.
La Crosse	30,421	B. E. McCormick.
Ladysmith	3,581	M. Lewis.
Lake Geneva	2,632	W. R. Rood.
Madison	38,378	Thomas W. Gosling.
Manitowoc	17,563	E. W. Waite.
Marinette	13,610	P. F. Neverman.
Marshfield	7,394	Chester Newlun.
Mayville	3,011	Ralph D. Owen.
Menasha	7,214	O. H. Plenzke.
Menomonie	5,104	W. G. Ballentine.
Merrill	8,068	H. W. Kircher.
Milwaukee	457,147	M. C. Potter.
Mineral Point	2,569	Arnold A. Vieth.
Monroe	4,788	L. R. Creutz.
Neenah	7,171	C. F. Hedges.
New London	4,667	David Newberry.
North Milwaukee	3,047	D. L. Swartz.
Oconomowoc	3,301	E. F. Strong.
Oconto	4,920	Henry E. Smith.
Oshkosh	33,162	Charles C. Bishop.
Park Falls	2,676	Geo. E. Denman.
Platteville	4,353	F. V. Powell.
Plymouth	3,415	C. A. Rubado.
Portage	5,582	A. J. Henkel.
Port Washington: District No. 1 / District No. 4	3,340	N. G. Lentzner. / Josephine Crow.
Prairie du Chien	3,537	W. C. Koepke.
Racine	58,593	F. M. Longanecker.
Reedsburg	2,997	Russell F. Lewis.
Rhinelander	6,654	W. P. Colburn.
Rice Lake	4,457	E. C. Hirsch.
Richland Center	3,409	A. F. Caldwell.
Ripon	3,929	L. P. Goodrich.
Shawano	3,544	R. J. McMahon.
Sheboygan	30,955	J. G. Walvoord.
Shorewood (P. O. Milwaukee).	2,650	C. R. Rounds.
South Milwaukee	7,598	Fred. W. Hein.
Sparta	4,466	Nicholas Gundersen.
Stanley	2,577	C. W. Dodge.
Stevens Point	11,371	H. C. Snyder.
Stoughton	5,101	J. E. Roberts.
Sturgeon Bay	4,553	E. C. Gotham.
Superior	39,671	Grace Geary.
Tomah	3,257	W. E. Bush.
Tomahawk	2,898	Fred Ek.
Two Rivers	7,305	Fred G. Bishop.
Viroqua	2,574	L. W. Fulton.
Washburn	3,707	Howard E. Wilkins.
Watertown	9,299	Thomas J. Berto.
Waukesha	12,558	G. O. Banting.
Waupaca	2,839	R. E. Brasure.
Waupun	4,440	H. S. Hemenway.
Wausau	18,661	Silas B. Tobey.
Wauwatosa	5,818	Philip A. Kolb.
West Allis	13,745	T. J. Jones.
West Bend	3,378	D. E. McLane.
Whitewater	3,215	A. R. Page.
Wisconsin Rapids	7,243	E. G. Doudna.
WYOMING.		
Casper	11,447	A. A. Slade.
Cheyenne	13,829	A. S. Jessup.
Evanston	3,479	C. C. Voeller.
Greybull	2,692	Arthur C. Cross.
Laramie	6,301	J. C. Knode.
Rawlins	3,969	C. A. Anderson.
Rock Springs	6,456	O. C. Schwiering.
Sheridan	9,175	J. J. Early.

V.—Presidents of Universities and Colleges.

Location.	University or college.	For men, for women, or coeducational.	Name of president.
ALABAMA.			
Athens	Athens Female College	Women	Benjamin B. Glasgow, D. D.
Auburn	Alabama Polytechnic Institute	Coed	Spright Dowell, LL. D.
Birmingham	Birmingham-Southern College	Coed	Guy E. Snavely, Ph. D.
Do	Howard College	Coed	Charles B. Williams, D. D.
Marion	Judson College	Women	Paul V. Bomar, D. D.
Do	Marion Institute	Men	Hopson O. Murfee, LL. D.
Montgomery	Woman's College of Alabama	Women	Mifflin W. Swartz, Ph. D.
St. Bernard	St. Bernard College	Men	Bernard Menges, O. S. B.
Spring Hill	Spring Hill College	Men	J. C. Kearns, S. J.
Talladega	Talladega College (colored)	Coed	F. A. Sumner, B. D.
University	University of Alabama	Coed	George H. Denny, LL. D.

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V.—PRESIDENTS OF UNIVERSITIES AND COLLEGES—Continued.

Location.	University or college.	For men, for women, or coeducational.	Name of president.
ARIZONA.			
Tucson	University of Arizona	Coed	
ARKANSAS.			
Arkadelphia	Henderson-Brown College	Coed	James M. Workman, LL. D.
Do	Ouachita College	Coed	Charles E. Dicken, D. D.
Batesville	Arkansas College	Coed	Wm. S. Lacy, D. D.
Clarksville	College of the Ozarks	Coed	Hubert S. Lyle, D. D.
Conway	Central Baptist College	Women	Doak S. Campbell, A. B.
Do	Hendrix College	Coed	
Fayetteville	University of Arkansas	Coed	John C. Futrall, LL. D.
Little Rock	Little Rock College	Men	H. A. Heagney, LL. D.
Searcy	Galloway College	Women	J. M. Williams.
CALIFORNIA.			
Berkeley	University of California [1]	Coed	David P. Barrows, LL. D.
Claremont	Pomona College	Coed	James A. Blaisdell, D. D.
Los Angeles	Occidental College	Coed	Remsen D. Bird, D. D.
Do	University of Southern California	Coed	Rufus B. von Klein Smid, Sc. D.
Mills College	Mills College	Women	Aurelia H. Reinhardt, LL. D.
Oakland	St. Mary's College	Men	Brother Gregory, A. M.
Pasadena	California Institute of Technology	Men	
Redlands	University of Redlands	Coed	Victor L. Duke, LL. D.
St. Helena	Pacific Union College	Coed	Wm. E. Nelson, B. S.
San Francisco	St. Ignatius University	Men	Pius L. Moore, S. J.
San Jose	College of Notre Dame	Women	Sister Julia
Do	College of the Pacific	Coed	Tully C. Knoles, D. D.
San Rafael	Dominican College	Women	
Santa Clara	University of Santa Clara	Men	T. L. Murphy, S. J.
Stanford University	Leland Stanford Junior University	Coed	Ray L. Wilbur, LL. D.
Whittier	Whittier College	Coed	Harry N. Wright, Ph. D.
COLORADO.			
Boulder	University of Colorado	Coed	George Norlin, Ph. D.
Colorado Springs	Colorado College	Coed	Clyde A. Duniway, LL. D.
Denver	Regis College	Men	Robert M. Kelley, S. J.
Do	Colorado Woman's College	Women	John W. Bailey, Ph. D.
Do	University of Denver	Coed	Wilber D. Engle, Sc. D., acting.
Fort Collins	Colorado Agricultural College	Coed	Chas. A. Lory, LL. D.
Golden	Colorado School of Mines	Men	Victor C. Alderson, LL. D.
CONNECTICUT.			
Hartford	Trinity College	Men	Remsen B. Ogilby, D. D.
Middletown	Wesleyan University	Men	William A. Shanklin, LL. D.
New Haven	Yale University	Men	James R. Angell, LL. D.
New London	Connecticut College for Women	Women	Benjamin T. Marshall, A. M.
Storrs	Connecticut Agricultural College	Coed	Charles L. Beach, B. S.
DELAWARE.			
Newark	University of Delaware	Coed	Walter Hullihen, Ph. D.
DISTRICT OF COLUMBIA.			
Washington	American University	Coed	John W. Hamilton, LL. D.
Do	Catholic Sisters College	Women	Patrick J. McCormick, Ph. D., dean.
Do	Catholic University of America	Men	Thomas J. Shahan, S. T. D., rector.
Do	Gallaudet College	Coed	Percival Hall, Litt. D.
Do	Georgetown University	Men	John B. Creeden, Ph. D.
Do	George Washington University	Coed	Howard L. Hodgkins, Ph. D.
Do	Howard University (colored)	Coed	J. Stanley Durkee, Ph. D.
Do	Trinity College	Women	Sister Raphael.
Do (Takoma Park).	Washington Missionary College	Coed	Marion E. Cady, A. M.

[1] Southern Branch of University of California, Los Angeles, Ernest C. Moore, LL. D., director.

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V.—Presidents of Universities and Colleges—Continued.

Location.	University or college.	For men, for women, or coeducational.	Name of president.
FLORIDA.			
Deland	John B. Stetson University	Coed	Lincoln Hulley, LL. D.
Gainesville	University of Florida	Men	Albert A. Murphree, LL. D.
Clearwater	Southern College	Coed	R. H. Alderman, A. B.
Tallahassee	Florida State College for Women	Women	Edward Conradi, Ph. D.
Winter Park	Rollins College	Coed	George M. Ward, LL. D.
GEORGIA.			
Athens	University of Georgia	Men	David C. Barrow, LL. D., chancellor.
Atlanta	Atlanta University (colored)	Coed	Edward T. Ware, A. B.
Do	Georgia School of Technology	Men	
Do	Morehouse College (colored)	Men	John Hope, LL. D.
Do	Morris Brown University (colored)	Coed	John H. Lewis, A. M.
Augusta	Paine College (colored)	Coed	Ray S. Tomlin, B. D., acting.
College Park	Cox College	Women	Wm. S. Cox, B. Arch.
Dahlonega	North Georgia Agricultural College	Coed	Gustavus R. Glenn, LL. D.
Decatur	Agnes Scott College	Women	Frank H. Gaines, LL. D.
Demorest	Piedmont College	Coed	Frank E. Jenkins, D. D.
Emory University	Emory University	Men	Franklin N. Parker, D. D.
Forsyth	Bessie Tift College	Women	Joshua H. Foster, D. D.
Gainesville	Brenau College	Women	Haywood J. Pearce, Ph. D.
Lagrange	Lagrange College	Women	W. E. Thompson, A. B.
Macon	Mercer University	Men	Rufus W. Weaver, LL. D.
Do	Wesleyan College	Women	Wm. F. Quillian, A. B.
Oglethorpe University	Oglethorpe University	Coed	Thornwell Jacobs, LL. D.
Rome	Shorter College	Women	W. D. Furry, Ph. D. acting.
South Atlanta	Clark University (colored)	Coed	Harry A. King, D. D.
HAWAII.			
Honolulu	University of Hawaii	Coed	Arthur L. Dean, Ph. D.
IDAHO.			
Caldwell	College of Idaho	Coed	William J. Boone, D. D.
Gooding	Gooding College	Coed	Chas. W. Tenney.
Moscow	University of Idaho	Coed	Alfred H. Upham, Ph. D.
ILLINOIS.			
Abingdon	Hedding College	Coed	Clarence W. Green, Ph. D.
Alton	Shurtleff College	Coed	George M. Potter, A. M.
Aurora	Aurora College	Coed	Orrin R. Jenks, D. D.
Bloomington	Illinois Wesleyan University	Coed	Theodore Kemp, LL. D.
Bourbonnais	St. Viator College	Men	W. J. Bergin, C. S. V.
Carthage	Carthage College	Coed	Harvey D. Hoover, S. T. D.
Chicago	Armour Institute of Technology	Men	Howard M. Raymond, E. E., acting.
Do	De Paul University	Coed	Thomas F. Levan, D. D.
Do	Lewis Institute	Coed	Geo. N. Carman, A. M., director.
Do	Loyola University	Men	Wm. H. Agnew, S. J.
Do	St. Francis Xavier College	Women	Sister Mary Sophia.
Do	University of Chicago	Coed	Harry Pratt Judson, LL. D.
Decatur	James Millikin University	Coed	Louis E. Holden, LL. D.
Eureka	Eureka College	Coed	L. O. Lehman, LL. D.
Evanston	Northwestern University	Coed	Walter D. Scott, Ph. D.
Ewing	Ewing College	Coed	Harvey A. Smoot, D. D.
Galesburg	Knox College	Coed	James L. McConaughy, Ph. D.
Do	Lombard College	Coed	Joseph M. Tilden, LL. D.
Greenville	Greenville College	Coed	Eldon Grant Burritt, A. M.
Jacksonville	Illinois College	Coed	Charles H. Rammelkamp, Ph. D.
Do	Illinois Woman's College	Women	Joseph R. Harker, LL. D.
Lake Forest	Lake Forest College	Coed	Herbert McC. Moore, D. D.
Lebanon	McKendree College	Coed	George E. McCammon, D. D.
Lincoln	Lincoln College	Coed	A. E. Turner, LL. D.
Monmouth	Monmouth College	Coed	Thos. H. McMichael, D. D.
Naperville	Northwestern College	Coed	Edward E. Rall, Ph. D.
Peoria	Bradley Polytechnic Institute	Coed	Theodore C. Burgess, Ph. D.
River Forest	Rosary College	Women	Sister M. Clementine, A. M
Rockford	Rockford College	Women	Wm. A. Maddox, Ph. D.
Rock Island	Augustana College	Coed	Gustav A. Andreen, D. D.
Urbana	University of Illinois	Coed	David Kinley, LL. D.
Wheaton	Wheaton College	Coed	Charles A. Blanchard, D. D.

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V.—PRESIDENTS OF UNIVERSITIES AND COLLEGES—Continued.

Location.	University or college.	For men, for women, or coeducational.	Name of president.
INDIANA.			
Bloomington	Indiana University	Coed	William L. Bryan, LL. D.
Crawfordsville	Wabash College	Men	Geo. Lewes Mackintosh, LL. D.
Earlham	Earlham College	Coed	David M. Edwards, Ph. D.
Evansville	Evansville College	Coed	Alfred F. Hughes, S. T. B.
Franklin	Franklin College	Coed	Charles E. Goodell, LL. D.
Goshen	Goshen College	Coed	Irvin R. Detweiler, A. B.
Greencastle	De Pauw University	Coed	Geo. R. Grose, LL. D.
Hanover	Hanover College	Coed	William A. Millis, LL. D.
Indianapolis	Butler College	Coed	Robert J. Aley, LL. D.
Do	Indiana Central University	Coed	Irby J. Good, A. M.
La Fayette	Purdue University	Coed	Henry W. Marshall, acting.
North Manchester	Manchester College	Coed	Otho Winger, LL. D.
Merom	Union Christian College	Coed	W. S. Alexander.
Notre Dame	St. Mary's College and Academy	Women	Mother M. Pauline, LL. D.
Do	University of Notre Dame	Men	James A. Burns, C. S. C.
Oakland City	Oakland City College	Coed	Wm. P. Dearing, A. B.
St. Mary of the Woods	St. Mary of the Woods College	Women	Mother Mary Cleophas.
Terre Haute	Rose Polytechnic Institute	Men	Philip B. Woodworth, Sc. D.
Upland	Taylor University	Coed	James M. Taylor, D. D.
Valparaiso	Valparaiso University	Coed	John E. Roessler, Litt. D.
IOWA.			
Ames	Iowa State College of Agriculture and Mechanic Arts.	Coed	Raymond A. Pearson, LL. D.
Cedar Rapids	Coe College	Coed	Harry M. Gage, LL. D.
Clinton	Wartburg College	Men	Otto L. Proehl, A. B.
Davenport	St. Ambrose College	Men	Wm. L. Hannon, A. M.
Decorah	Luther College	Men	Oscar L. Olson, Ph. D., acting.
Des Moines	Des Moines University	Coed	John W. Million, LL. D.
Do	Grand View College	Coed	
Do	Drake University	Coed	Arthur Holmes, Ph. D.
Dubuque	Columbia College	Men	A. D. Howard, A. M.
Do	University of Dubuque	Coed	Cornelius M. Steffens, D. D.
Do	Mount St. Joseph College	Women	Sister Mary Chionia.
Fairfield	Parsons College	Coed	R. A. Montgomery, LL. D.
Fayette	Upper Iowa University	Coed	J. P. Van Horn, D. D.
Grinnell	Grinnell College	Coed	John H. T. Main, LL. D.
Hopkinton	Lenox College	Coed	J. F. Hinkhouse, D. D.
Indianola	Simpson College	Coed	John L. Hillman, D. D.
Iowa City	State University of Iowa	Coed	Walter A. Jessup, Ph. D.
Iowa Falls	Ellsworth College	Coed	Ido F. Meyer, A. M.
Le Mars	Western Union College	Coed	Charles A. Mock, Ph. D.
Mount Pleasant	Iowa Wesleyan College	Coed	U. S. Smith, D. D.
Mount Vernon	Cornell College	Coed	
Oskaloosa	Penn College	Coed	Henry E. McGrew, D. D.
Sioux City	Morningside College	Coed	Frank E. Mossman, D. D.
Storm Lake	Buena Vista College	Coed	Arthur M. Boyd, D. D.
Tabor	Tabor College	Coed	Royal S. Montgomery, DD.
University Park	Central Holiness University	Coed	J. L. Brasher, D. D.
KANSAS.			
Atchison	St. Benedict's College	Men	Innocent Wolf, D. D.
Baldwin City	Baker University	Coed	Osman G. Markham, Litt. D., acting.
Emporia	College of Emporia	Coed	Frederick W. Lewis, D. D.
Highland	Highland College	Coed	J. L. Howe, Ph. B.
Kansas City	Kansas City University	Coed	J. C. Williams, LL. D., chancellor.
Lawrence	University of Kansas	Coed	Ernest H. Lindley, Ph. D.
Lindsborg	Bethany College	Coed	Ernst F. Pihlblad, D. D.
McPherson	McPherson College	Coed	Daniel W. Kurtz, D. D.
Manhattan	Kansas State Agricultural College	Coed	Wm. M. Jardine, LL. D.
Newton	Bethel College	Coed	J. H. Langenwalter, S. T. M.
Ottawa	Ottawa University	Coed	Silas E. Price, D. D.
St. Marys	St. Marys College	Men	William E. Cogley, S. J.
Salina	Kansas Wesleyan University	Coed	L. B. Bowers, D. D.
Sterling	Sterling College	Coed	Ross T. Campbell, D. D.
Topeka	Washburn College	Coed	Parley P. Womer, Sc. D.
Wichita	Fairmount College	Coed	
Do	Friends University	Coed	W. O. Mendenhall, Ph. D.
Winfield	Southwestern College	Coed	Albert E. Kirk, D. D.
KENTUCKY.			
Berea	Berea College	Coed	William J. Hutchins, D. D.
Bowling Green	Ogden College	Men	J. Howard Edgerton, A. M.
Danville	Centre College	Men	

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V.—Presidents of Universities and Colleges—Continued.

Location.	University or college.	For men, for women, or coeducational.	Name of president.
KENTUCKY—contd.			
Georgetown	Georgetown College	Coed	Maldon B. Adams, LL. D.
Lexington	Transylvania College	Coed	Thomas Macartney, Ph. D., acting.
Do	University of Kentucky	Coed	Frank L. McVey, LL. D.
Louisville	University of Louisville	Coed	John Patterson, LL. D., dean.
St. Marys	St. Marys College	Men	Michael Jaglowicz, C. R.
Wilmore	Asbury College	Coed	H. C. Morrison, D. D.
Winchester	Kentucky Wesleyan College	Coed	Will B. Campbell, D. D.
LOUISIANA.			
Baton Rouge	Louisiana State University and Agricultural and Mechanical College.	Coed	Thomas D. Boyd, LL. D.
Clinton	Silliman Collegiate Institute	Women	U. B. Currie.
Convent	Jefferson College	Men	P. F. Quinn, S. T. B.
New Orleans	H. Sophie Newcomb Memorial College.	Women	Pierce Butler, Ph. D., dean.
Do	Loyola University	Men	E. A. Cummmgs, S. J.
Do	Tulane University of Louisiana	Men	Albert B. Dinwiddie, LL. D.
Pineville	Louisiana College	Coed	C. Cottingham, LL. D.
Shreveport	Centenary College	Coed	George S. Sexton, D. D.
MAINE.			
Brunswick	Bowdoin College	Men	Kenneth C. M. Sills, LL. D.
Lewiston	Bates College	Coed	Clifton D. Gray, Ph. D.
Orono	University of Maine	Coed	
Waterville	Colby College	Coed	Arthur J. Roberts, LL. D.
MARYLAND.			
Annapolis	St. John's College	Men	Thomas Fell, LL. D.
Do	United States Naval Academy	Men	Rear Adm. Henry B. Wilson, superintendent.
Baltimore	Goucher College	Women	Wm. W. Guth, LL. D.
Do	Johns Hopkins University	Coed	Frank J. Goodnow, LL. D.
Do	Loyola College	Men	Joseph A. McEneany, S. J.
Do	Morgan College (colored)	Coed	John O. Spencer, Ph. D.
Do	Mount St. Joseph's College	Men	Brother James, A. M.
Do	Notre Dame College of Maryland	Women	Sister Mary Philemon.
Chestertown	Washington College	Coed	Clarence P. Gould, Ph. D.
College Park	University of Maryland	Coed	Alfred F. Woods, D. Agr.
Ellicott City	Rock Hill College	Men	Brother E. Felix, A. M.
Emmitsburg	Mount St. Mary's College	Men	Bernard J. Bradley, LL. D.
Frederick	Hood College	Women	Joseph H. Apple, LL. D.
Lutherville	Maryland College for Women	Women	Beekman O. Rouse, A. B.
New Windsor	Blue Ridge College	Coed	Ross D. Murphy, A. B.
Westminster	Western Maryland College	Coed	Albert N. Ward, D. D.
MASSACHUSETTS.			
Amherst	Amherst College	Men	Alexander Meiklejohn, LL. D.
Do	Massachusetts Agricultural College.	Coed	Kenyon L. Butterfield, LL. D.
Boston	Boston University	Coed	Lemuel H. Murlin, LL. D.
Do	Emmanuel College	Women	
Do	Northeastern College	Men	Frank P. Speare, LL. B.
Do	Simmons College	Women	Henry Lefavour, LL. D.
Cambridge	Harvard University	Men	Abbott Lawrence Lowell, LL. D.
Do	Massachusetts Institute of Technology.	Coed	Elihu Thompson, Sc. D., acting.
Do	Radcliffe College	Women	Le Baron R. Briggs, LL. D.
Chestnut Hill	Boston College	Men	William Devlin, S. J.
Lowell	Lowell Textile School	Coed	Chas. H. Eames, B. S.
Northampton	Smith College	Women	William A. Neilson, LL. D.
Norton	Wheaton College	Women	Samuel V. Cole, LL. D.
South Hadley	Mount Holyoke College	Women	Mary E. Woolley, LL. D.
Springfield	International Young Men's Christian Association College.	Men	Lawrence L. Doggett, D. D.
Tufts College	Tufts College	Coed	John A. Cousens, A. B.
Wellesley	Wellesley College	Women	Ellen F. Pendleton, LL. D.
Williamstown	Williams College	Men	Harry A. Garfield, LL. D.
Worcester	Clark University	Men	Wallace W. Atwood, Ph. D.
Do	College of the Holy Cross	Men	James J. Carlin, S. J.
Do	Worcester Polytechnic Institute	Men	Ira N. Hollis, Sc. D.

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V.—PRESIDENTS OF UNIVERSITIES AND COLLEGES—Continued.

Location.	University or college.	For men, for women, or coeducational.	Name of president.
MICHIGAN.			
Adrian	Adrian College	Coed	Harlan L. Feeman, D. D.
Albion	Albion College	Coed	John W. Laird, LL. D.
Alma	Alma College	Coed	Harry Means Crooks, LL. D.
Ann Arbor	University of Michigan	Coed	Marion Le Roy Burton, LL. D.
Berrien Springs	Emmanuel Missionary College	Coed	Frederick Griggs, A. M.
Detroit	University of Detroit	Men	Wm. T. Doran, S. J.
East Lansing	Michigan Agricultural College	Coed	David Friday, A. B.
Hillsdale	Hillsdale College	Coed	Joseph W. Mauck, LL. D.
Holland	Hope College	Coed	Edward D. Dimment, L. H. D.
Houghton	Michigan College of Mines	Men	Fred W. McNair, Sc. D.
Kalamazoo	Kalamazoo College	Coed	Herbert L. Stetson, LL. D.
Monroe	St. Mary's College	Women	
Olivet	Olivet College	Coed	Paul F. Voelker, Ph. D.
MINNESOTA.			
Collegeville	St. John's University	Men	Peter Engle, Ph. D.
Minneapolis	Augsburg Seminary	Men	George Sverdrup, M. A.
Do	University of Minnesota	Coed	Lotus D. Coffman, Ph. D.
Moorhead	Concordia College	Coed	J. A. Aasgaard, B. D.
Northfield	Carleton College	Coed	Donald J. Cowling, LL. D.
Do	St. Olaf College	Coed	Lars W. Boe, D. D.
St. Paul	College of St. Catherine	Women	Sister Antonia, A. M.
Do	College of St. Thomas	Men	Humphrey Moynihan, D. D.
Do	Hamline University	Coed	Samuel F. Kerfoot, D. D.
Do	Macalester College	Coed	Elmer A. Bess, D. D.
St. Peter	Gustavus Adolphus College	Coed	Oscar J. Johnson, D. D.
Winona	College of St. Teresa	Women	Mother M. Leo Tracy.
MISSISSIPPI.			
Agricultural College	Mississippi Agricultural and Mechanical College.	Coed	David C. Hull, M. Sc.
Blue Mountain	Blue Mountain College	Women	W. J. Lowrey, LL. D.
Brookhaven	Whitworth Female College	Women	I. W. Cooper, D. D.
Clinton	Mississippi College	Men	John W. Provine, LL. D.
Columbus	Mississippi State College for Women.	Women	J. C. Fant, Ph. D.
Grenada	Grenada College	Women	J. R. Countiss, D. D.
Holly Springs	Rust College (colored)	Coed	George Evans, D. D.
Jackson	Belhaven College	Women	G. T. Gillespie, D. D.
Do	Millsaps College	Coed	Alexander F. Watkins, D. D.
University	University of Mississippi	Coed	Joseph N. Powers, LL. D., chancellor.
MISSOURI.			
Cameron	Missouri Wesleyan College	Coed	Carmeron Harmon, D. D.
Canton	Culver-Stockton College	Coed	John H. Wood, D. D.
Columbia	University of Missouri	Coed	John C. Jones, LL. D.
Fayette	Central College	Coed	Paul H. Linn, D. D.
Fulton	Westminster College	Men	E. E. Reed, D. D.
Liberty	William Jewell College	Men	David J. Evans, Th. D.
Marshall	Missouri Valley College	Coed	Wm. H. Black, LL. D.
Parkville	Park College	Coed	Frederick W. Hawley, LL. D.
St. Charles	Lindenwood College	Women	John L. Roemer, D. D.
St. Louis	St. Louis University	Men	William F. Robison, S. J.
Do	Washington University	Coed	Frederic A. Hall, LL. D., chancellor.
Springfield	Drury College	Coed	Thomas W. Nadal, LL. D.
Tarkio	Tarkio College	Coed	Joseph A. Thompson, LL. D.
Warrenton	Central Wesleyan College	Coed	Otto E. Kriege, D. D.
Webster Groves	Loretto College	Women	Mother M. Edith, A. B.
MONTANA.			
Bozeman [1]	Montana State College of Agriculture and Mechanic Arts.	Coed	Alfred Atkinson, Sc. D.
Butte [1]	Montana State School of Mines	Coed	George W. Craven, B. S.
Helena	Mt. St. Charles College	Men	Norbert C. Hoff, A. M.
Missoula [1]	Montana State University	Coed	Charles H. Clapp, Ph. D.

[1] The chief administrative officer of the University of Montana, which includes the State higher institutions, is the chancellor, Edward C. Elliott, Helena, Mont.

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V.—Presidents of Universities and Colleges—Continued.

Location.	University or college.	For men, for women, or coeducational.	Name of president.
NEBRASKA.			
Bellevue	Bellevue College	Coed	Charles E. Baskerville, D. D.
Bethany	Cotner College	Coed	Andrew D. Harmon, A. M.
Blair	Dana College	Coed	C. X. Hansen, L. H. D.
College View	Union College	Coed	Harry A. Morrison, A. M.
Crete	Doane College	Coed	John N. Bennett, LL. D.
Fremont	Midland College	Coed	Ezra E. Stauffer, D. D.
Grand Island	Grand Island College	Coed	J. W. Wells, A. M.
Hastings	Hastings College	Coed	Calvin H. French, LL. D.
Lincoln	University of Nebraska	Coed	Samuel Avery, LL. D., chancellor.
Omaha	Creighton University	Men	John F. McCormick, S. J.
Do	Duchesne College	Women	
Do	University of Omaha	Coed	Daniel E. Jenkins, D. D.
University Place	Nebraska Wesleyan University	Coed	Isaac B. Schreckengast, S. T. B.
York	York College	Coed	H. U. Roop, Ph. D.
NEVADA.			
Reno	State University of Nevada	Coed	Walter E. Clark, LL. D.
NEW HAMPSHIRE.			
Durham	New Hampshire College of Agriculture and Mechanic Arts.	Coed	Ralph D. Hetzel, LL. D.
Hanover	Dartmouth College	Men	Ernest M. Hopkins, LL. D.
Manchester	St. Anselm's College	Men	Ernest Helmstetter, D. D.
NEW JERSEY.			
Convent Station	College of St. Elizabeth	Women	Sister Marie José Byrne, Ph. D., dean.
Hoboken	Stevens Institute of Technology	Men	Alexander C. Humphreys, LL. D.
Jersey City	St. Peter's College	Men	James F. McDermott, S. J.
Kenilworth	Upsala College	Coed	Carl G. Erickson, B. D.
New Brunswick	Rutgers College	Men	Wm. H. S. Demarest, LL. D.
North Plainfield	Mt. St. Mary's College	Women	
Princeton	Princeton University	Men	John Grier Hibben, LL. D.
South Orange	Seton Hall College	Men	Jas. F. Mooney, D. D.
NEW MEXICO.			
Albuquerque	University of New Mexico	Coed	David S. Hill., LL. D.
Socorro	New Mexico School of Mines	Coed	Edgar H. Wells, B. S.
State College	New Mexico College of Agriculture and Mechanic Arts.	Coed	Harry L. Kent, M. S.
NEW YORK.			
Albany	New York State Library School	Coed	James I. Wyer, jr., director.
Alfred	Alfred University	Coed	Boothe C. Davis, LL. D.
Annandale	St. Stephen's College	Men	Bernard I. Bell, S. T. B.
Aurora	Wells College	Women	Kerr D. Macmillan, S. T. D.
Brooklyn	Adelphi College	Women	Frank D. Blodgett, LL. D.
Do	Brooklyn College	Men	Joseph A. Farrell, S. J.
Do	Polytechnic Institute of Brooklyn	Men	Fred. W. Atkinson, Ph. D.
Do	St. Francis College	Men	Brother Jarlath, O. S. F.
Do	St. John's College	Men	John W. Moore, LL. D.
Buffalo	Canisius College	Men	M. J. Ahern, S. J.
Do	D'Youville College	Women	Sister Verecunda.
Do	University of Buffalo	Coed	
Canton	St. Lawrence University	Coed	Richard E. Sykes, D. D.
Clinton	Hamilton College	Men	Frederick C. Ferry, LL. D.
Elmira	Elmira College	Women	Frederick Lent, Ph. D.
Geneva	Hobart College	Coed	Murray Bartlett, D. D.
Hamilton	Colgate University	Men	Melbourne S. Read, Ph. D.
Ithaca	Cornell University	Coed	Livingston Farrand, LL. D.
New Rochelle	College of New Rochelle	Women	Joseph F. Mooney, D. D.
New York	Barnard College	Women	Virginia C. Gildersleeve, Ph. D., dean.
Do	College of the City of New York	Men	Sidney E. Mezes, LL. D.
Do	College of the Sacred Heart	Women	
Do	Columbia University	Coed	Nicholas M. Butler, LL. D.
Do	Fordham University	Men	Edward P. Tivnan, S. J.
Do	Hunter College of the City of New York.	Women	George S. Davis, LL. D.
Do	Manhattan College	Men	Brother Jasper, A. M.
Do	College of Mount Saint Vincent	Women	
Do	College of the Sacred Heart	Women	

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V.—Presidents of Universities and Colleges—Continued.

Location.	University or college.	For men, for women, or coeducational.	Name of president.
NEW YORK—contd.			
New York	New York University	Coed	Elmer Ellsworth Brown, LL. D. chancellor.
Do	Teachers College	Coed	James E. Russell, LL. D., dean.
Niagara University	Niagara University	Men	W. E. Katzenberger, C. M.
Potsdam	Clarkson College of Technology	Men	John P. Brooks, Sc. D., director.
Poughkeepsie	Vassar College	Women	Henry N. MacCracken, LL. D.
Rochester	University of Rochester	Coed	Rush Rhees, LL. D.
St. Bonaventure	St. Bonaventure's College	Men	Thomas Plassman, O. F. M.
Saratoga Springs	Skidmore School of Arts	Women	Charles H. Keyes, Ph. D.
Schenectady	Union University	Men	Charles A. Richmond, LL. D
Syracuse	New York State College of Forestry (at Syracuse University).	Men	Franklin Moon, M. F., dean.
Do	Syracuse University	Coed	Charles W. Flint, LL. D., chancellor.
Troy	Rensselaer Polytechnic Institute	Men	Palmer C. Ricketts, LL. D.
Do	Russell Sage College	Women	Eliza Kellas, Ph. B.
West Point	United States Military Academy	Men	Brig. Gen. Frederick W. Sladen, superintendent.
NORTH CAROLINA.			
Asheville	St. Genevieve's College and Academy.	Women	Mother M. L. Lorin, A. M.
Belmont	Belmont Abbey College	Men	Leo Haid, D. D.
Chapel Hill	University of North Carolina	Coed	Harry W. Chase, LL. D.
Charlotte	Biddle University (colored)	Men	H. L. McCrorey, D. D.
Do	Queens College	Women	Henry C. Evans, D. D.
Davidson	Davidson College	Men	Wm. J. Martin, LL. D.
Durham	Trinity College	Coed	Wm. P. Few, LL. D.
Elon College	Elon College	Coed	Wm. A. Harper, LL. D.
Greensboro	Greensboro College for Women	Women	S. B. Turrentine, D. D.
Do	North Carolina College for Women.	Women	Julius I. Foust, LL. D.
Guilford College	Guilford College	Coed	Raymond Binford, Ph. D.
Hickory	Lenoir College	Coed	John C. Perry, D. D.
Raleigh	Meredith College	Women	Charles E. Brewer, LL. D.
Do	Shaw University (colored)	Coed	Joseph L. Peacock, A. M.
Red Springs	Flora Macdonald College	Women	C. G. Vardell, D. D.
Salisbury	Livingstone College (colored)	Coed	D. C. Suggs, Ph. D.
Wake Forest	Wake Forest College	Men	Wm. L. Poteat, LL. D.
West Raleigh	North Carolina State College of Agriculture and Engineering.	Men	W. C. Riddick, LL. D.
Wilson	Atlantic Christian College	Coed	H. S. Hilley, A. B.
Winston-Salem	Salem Academy and College	Women	Howard E. Rondthaler, D. D.
NORTH DAKOTA.			
Agricultural College	North Dakota Agricultural College.	Coed	John L. Coulter, Ph. D.
Fargo	Fargo College	Coed	
Jamestown	Jamestown College	Coed	Barend H. Kroeze, D. D.
University	University of North Dakota	Coed	Thomas F. Kane, LL. D.
OHIO.			
Ada	Ohio Northern University	Coed	Albert E. Smith, D. D.
Akron	Municipal University of Akron	Coed	Parke R. Kolbe, Ph. D.
Alliance	Mount Union College	Coed	Wm. H. McMaster, D. D.
Ashland	Ashland College	Coed	Edwin E. Jacobs, Ph. D.
Athens	Ohio University	Coed	Elmer B. Bryan, LL. D.
Berea	Baldwin-Wallace College	Coed	Albert B. Storms, LL. D.
Bluffton	Bluffton College	Coed	Samuel K. Mosiman, Ph. D.
Cedarville	Cedarville College	Coed	Wilbert R. McChesney, D. D.
Cincinnati	College and Academy of the Sacred Heart.	Women	
Do	St. Xavier College	Men	James McCabe, S. J.
Do	University of Cincinnati	Coed	Frederick C. Hicks, Ph. D.
Cleveland	Case School of Applied Science	Men	Charles S. Howe, LL. D.
Do	St. Ignatius College	Men	Thomas J. Smith, S. J.
Do	Western Reserve University	Coed	J. D. Williamson, acting.
Columbus	Capital University	Coed	Otto Mees, D. D.
Do	Ohio State University	Coed	Wm. O. Thompson, LL. D.
Dayton	University of Dayton	Men	Joseph A. Tetzlaff, D. D.
Defiance	Defiance College	Coed	Albert G. Caris, Litt. D.
Delaware	Ohio Wesleyan University	Coed	John W. Hoffman, LL. D.
Findlay	Findlay College	Coed	Wm. H. Guyer, D. D.
Gambier	Kenyon College	Men	Wm. F. Pierce, L. H. D.
Granville	Denison University	Coed	Clark W. Chamberlain, Ph. D.
Hiram	Hiram College	Coed	Miner Lee Bates, LL. D.
Marietta	Marietta College	Coed	Edwards S. Parsons, L. H. D.

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V.—Presidents of Universities and Colleges—Continued.

Location.	University or college.	For men, for women, or coeducational.	Name of president.
OHIO—continued.			
New Athens	Franklin College	Coed	Will M. Hughes, D. D.
New Concord	Muskingum College	Coed	J. K. Montgomery, D. D.
Oberlin	Oberlin College	Coed	Henry C. King, LL. D.
Oxford	Miami University	Coed	Raymond M. Hughes, M. S.
Do	Oxford College for Women	Women	Eleanor N. Adams, Ph. D.
Do	Western College for Women	Women	W. W. Boyd, Ph. D.
Painesville	Lake Erie College	Women	Vivian Blanche Small, LL. D.
Rio Grande	Rio Grande College	Coed	Simeon H. Bing, A. M.
Springfield	Wittenberg College	Coed	Rees E. Tulloss, D. D.
Tiffin	Heidelberg University	Coed	Charles E. Miller, LL. D.
Toledo	St. John's University	Men	Francis X. Busch, S. J.
Do	Toledo University	Coed	A. Monroe Stowe, Ph. D.
Westerville	Otterbein College	Coed	Walter G. Clippinger, D. D.
Wilberforce	Wilberforce University (colored)	Coed	John A. Gregg, D. D.
Wilmington	Wilmington College	Coed	J. Edwin Jay, A. M.
Wooster	College of Wooster	Coed	Charles F. Wishart, D. D.
Yellow Springs	Antioch College	Coed	Arthur E. Morgan.
OKLAHOMA.			
Chickasha	Oklahoma College for Women	Women	G. W. Austin, B. S.
East Enid	Phillips University	Coed	Isaac N. McCash, LL. D.
Kingfisher	Kingfisher College	Coed	Henry W. Tuttle, D. D.
Norman	University of Oklahoma	Coed	Stratton D. Brooks, LL. D.
Oklahoma City	Oklahoma City College	Coed	Edwin G. Green, A. B.
Shawnee	Catholic University of Oklahoma	Men	D. Blaise, O. S. B.
Do	Oklahoma Baptist University	Coed	Judson A. Tolman.
Stillwater	Oklahoma Agricultural and Mechanical College.	Coed	James B. Eskridge, Ph. D.
Tulsa	University of Tulsa	Coed	James M. Gordon, LL. D.
OREGON.			
Albany	Albany College	Coed	Alfred M. Williams, D. D.
Corvallis	Oregon Agricultural College	Coed	William J. Kerr, Sc. D.
Eugene	University of Oregon	Coed	Prince L. Campbell, LL. D.
Forest Grove	Pacific University	Coed	Robert F. Clark, A. M.
McMinnville	Linfield College	Coed	Leonard W. Riley, D. D.
Newberg	Pacific College	Coed	Lewi T. Pennington, A. B.
Portland	Reed College	Coed	Richard F. Scholz, Ph. D.
Do	St. Mary's College	Women	
Salem	Willamette University	Coed	Carl G. Doney, LL. D.
PENNSYLVANIA.			
Allentown	Cedar Crest College for Women	Women	Wm. F. Curtis, Litt. D.
Do	Muhlenberg College	Men	John A. W. Haas, LL. D.
Annville	Lebanon Valley College	Coed	George D. Gossard, D. D.
Beatty	St. Vincent College	Men	Aurelius Stehle, D. D.
Beaver	Beaver College	Women	James M. Thoburn, jr., D. D.
Beaver Falls	Geneva College	Coed	A. A. Johnston, B. D.
Bethlehem	Lehigh University	Men	Charles R. Richards, D. Eng.
Do	Moravian College	Men	J. Taylor Hamilton, D. D.
Do	Moravian Seminary and College for Women.	Women	
Bryn Mawr	Bryn Mawr College	Women	Marion E. Park, Ph. D.
Carlisle	Dickinson College	Coed	James H. Morgan, LL. D.
Chambersburg	Wilson College	Women	Ethelbert D. Warfield, LL. D.
Chester	Pennsylvania Military College	Men	Chas. E. Hyatt, LL. D.
Collegeville	Ursinus College	Coed	George L. Omwake, Ph. D.
Easton	Lafayette College	Men	John H. MacCracken, LL. D.
Gettysburg	Gettysburg College	Coed	William A. Granville, LL. D.
Greensburg	Seton Hill College for Women	Women	
Greenville	Thiel College	Coed	Henry W. Elson, Litt. D.
Grove City	Grove City College	Coed	Weir C. Ketler, LL. D.
Haverford	Haverford College	Men	William W. Comfort, LL. D.
Huntingdon	Juniata College	Coed	I. Harvey Brumbaugh, Litt. D.
Lancaster	Franklin and Marshall College	Men	Henry H. Apple, LL. D.
Lewisburg	Bucknell University	Coed	Emory W. Hunt, LL. D.
Lincoln University	Lincoln University (colored)	Men	John B. Rendall, D. D.
Loretto	St. Francis College and Seminary	Men	John P. M. Doyle, LL. D.
Meadville	Allegheny College	Coed	Fred W. Hixson, LL. D.
Mechanicsburg	Irving Female College	Women	E. E. Campbell, Ph. D.
Myerstown	Albright College	Coed	L. Clarence Hunt, D. D.
New Wilmington	Westminister College	Coed	W. C. Wallace, D. D.

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V.—Presidents of Universities and Colleges—Continued.

Location.	University or college.	For men, for women, or coeducational.	Name of president.
PENNSYLVANIA—con.			
Philadelphia	Drexel Institute	Coed	Kenneth G. Matheson, LL. D.
Do	Dropsie College	Coed	Cyrus Adler, Ph. D.
Do	La Salle College	Men	Brother Richard, A. M.
Do	St. Joseph's College	Men	P. F. O'Gorman, S. J.
Do	Temple University	Coed	Russell H. Conwell, LL. D.
Do	University of Pennsylvania	Coed	Josiah H. Penniman, LL. D., acting provost.
Pittsburgh	Carnegie Institute of Technology	Coed	Arthur A. Hamerschlag, LL. D.
Do	Duquesne University of the Holy Ghost.	Men	Martin A. Hehir, LL. D.
Do	Pennsylvania College for Women	Women	John C. Acheson, LL. D.
Do	University of Pittsburgh	Coed	John G. Bowman, LL. D., chancellor.
Scranton	Marywood College	Women	
Selinsgrove	Susquehanna University	Coed	Charles T. Aikens, D. D.
State College	Pennsylvania State College	Coed	John M. Thomas, LL. D.
Swarthmore	Swarthmore College	Coed	Frank Aydelotte, A. M.
Villanova	Villanova College	Men	Francis A. Driscoll, O. S. A.
Washington	Washington and Jefferson College	Men	Simon S. Baker, A. M.
Waynesburg	Waynesburg College	Coed	Paul R. Stuart, acting.
PHILIPPINE ISLANDS.			
Manila	University of the Philippines	Coed	Guy Potter Benton, LL. D.
PORTO RICO.			
San Juan	University of Porto Rico	Coed	Paul G. Miller, Ph. D.
RHODE ISLAND.			
Kingston	Rhode Island State College	Coed	Howard Edwards, LL. D.
Providence	Brown University	Coed	W. H. P. Faunce, LL. D.
Do	Providence College	Men	Wm. D. Noon.
SOUTH CAROLINA.			
Anderson	Anderson College	Women	John E. White, D. D.
Charleston	College of Charleston	Men	Harrison Randolph, LL. D.
Do	The Citadel, the Military College of South Carolina.	Men	Col. O. J. Bond, A. M., superintendent.
Clemson College	Clemson Agricultural College	Men	Walter M. Riggs, LL. D.
Clinton	Presbyterian College of South Carolina.	Coed	Davison McD. Douglas, D. D.
College Place	Columbia College	Women	G. T. Pugh, Ph. D.
Columbia	Benedict College (colored)	Coed	Clarence B. Antisdel, B. D.
Do	Chicora College for Women	Women	S. C. Byrd, D. D.
Do	University of South Carolina	Coed	Wm. S. Currell, LL. D.
Due West	Erskine College	Coed	James S. Moffatt, D. D.
Do	Woman's College of Due West	Women	Richard L. Robinson, D. D.
Greenville	Furman University	Men	W. J. McGlothlin, D. D.
Do	Greenville Woman's College	Women	David M. Ramsey, D. D.
Greenwood	Lander College	Women	John O. Willson, D. D.
Hartsville	Coker College for Women	Women	E. W. Sikes, Ph. D.
Newberry	Newberry College	Coed	S. J. Derrick, LL. D.
Rock Hill	Winthrop College	Women	David B. Johnson, LL. D.
Spartanburg	Converse College	Women	Robert P. Pell, Litt. D.
Do	Wofford College	Men	Henry N. Snyder, LL. D.
SOUTH DAKOTA.			
Brookings	South Dakota State College of Agriculture and Mechanic Arts.	Coed	Willis E. Johnson, LL. D.
Huron	Huron College	Coed	
Mitchell	Dakota Wesleyn University	Coed	W. D. Schermerhorn, S. T. B.
Rapid City	State School of Mines	Coed	Cleophas C. O'Hara, Ph. D.
Sioux Falls	Sioux Falls College	Coed	V. C. Coulter, A. M.
Vermillion	University of South Dakota	Coed	Robert L. Slagle, Ph. D.
Yankton	Yankton College	Coed	Henry K. Warren, LL. D.
TENNESSEE.			
Bristol	King College	Men	Tilden Scherer, D. D.
Chattanooga	University of Chattanooga	Coed	Arlo A. Brown, D. D.
Clarksville	Southwestern Presbyterian University.	Men	Chas. E. Diehl, D. D.

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V.—Presidents of Universities and Colleges—Continued.

Location.	University or college.	For men, for women, or coeducational.	Name of president.
TENNESSEE—contd.			
Greenville	Tusculum College	Coed	Chas. O. Gray, D. D.
Harrogate	Lincoln Memorial University	Coed	George A. Hubbell, Ph. D.
Jackson	Union University	Coed	Henry E. Watters, D. D.
Jefferson City	Carson and Newman College	Coed	Oscar E. Sams, LL. D.
Knoxville	Knoxville College (colored)	Coed	J. K. Giffin, D. D.
Do	University of Tennessee	Coed	Harcourt A. Morgan, LL. D.
Lebanon	Cumberland University	Coed	A. B. Buchanan, D. D., acting.
McKenzie	Bethel College	Coed	N. J. Finney, A. M.
Maryville	Maryville College	Coed	Samuel T. Wilson, D. D.
Milligan	Milligan College	Coed	H. J. Derthick, A. M.
Murfreesboro	Tennessee College	Women	Geo. J. Burnett, A. M.
Nashville	Buford College	Women	Mrs. E. G. Buford.
Do	Fisk University (colored)	Coed	Fayette A. McKenzie, LL. D.
Do	Vanderbilt University	Coed	James H. Kirkland, LL. D., chancellor.
Sewanee	University of the South	Men	Albion W. Knight, D. D., vice chancellor.
Spencer	Burritt College	Coed	H. E. Scott, A. M.
Washington College	Washington College	Coed	James T. Cooter, D. D.
TEXAS.			
Abilene	Abilene Christian College	Coed	Jesse P. Sewell.
Do	Simmons College	Coed	Jefferson D. Sandefer, LL. D.
Austin	Univsrsity of Texas	Coed	Robert E. Vinson, LL. D.
Belton	Baylor Female College	Women	John C. Hardy, LL. D.
Brownwood	Daniel Baker College	Coed	S. E. Chandler, D. D.
Do	Howard Payne College	Coed	L. J. Mims, A. M.
College Station	Agricultural and Mechanical College of Texas.	Men	Wm. B. Bizzell, LL. D.
Dallas	University of Dallas	Men	Marshall F. Winne, Ph. D.
Do	Southern Methodist University	Coed	Hiram A. Boaz, D. D.
Denton	College of Industrial Arts	Women	Francis M. Bralley, LL. D.
Fort Worth	Texas Christian University	Coed	E. M. Waits, LL. D.
Do	Texas Woman's College	Women	H. E. Stout.
Georgetown	Southwestern University	Coed	
Houston	Rice Institute	Coed	Edgar O. Lovett, LL. D.
Marshall	Bishop College (colored)	Coed	C. H. Maxson, B. S.
Milford	Texas Presbyterian College	Women	French W. Thompson, D. D.
San Antonio	Our Lady of the Lake College	Women	H. A. Constantineau, D. D.
Do	St. Louis College	Men	James P. Canning, A. M.
Sherman	Austin College	Men	Thomas S. Clyce, LL. D.
Waco	Baylor University	Coed	Samuel P. Brooks, LL. D.
Waxahachie	Trinity University	Coed	Samuel Lee Hornbeak, LL. D.
UTAH.			
Logan	Agricultural College of Utah	Coed	Elmer G. Peterson, Ph. D.
Salt Lake City	University of Utah	Coed	George Thomas, Ph. D.
VERMONT.			
Burlington	University of Vermont and State Agricultural College.	Coed	Guy W. Bailey, LL. D.
Middlebury	Middlebury College	Coed	Paul D. Moody, LL. D.
Northfield	Norwich University	Men	Charles A. Plumley, A. M.
Winooski	St. Michael's College	Men	William Jeanmarie, S. S. E.
VIRGINIA.			
Ashland	Randolph-Macon College	Men	Robert E. Blackwell, LL. D.
Blacksburg	Virginia Agricultural and Mechanical College and Polytechnic Institute.	Men	Julian A. Burruss, A. M.
Bridgewater	Bridgewater College	Coed	Paul H. Bowman, D. D.
Charlottesville	University of Virginia	Coed	Edwin A. Alderman, LL. D.
Emory	Emory and Henry College	Coed	J. Stewart French.
Hampden-Sidney	Hampden-Sidney College	Men	Joseph D. Eggleston, LL. D.
Hollins	Hollins College	Women	Matty L. Cocke, Litt. D.
Lexington	Virginia Military Institute	Men	Edward W. Nichols, supt.
Do	Washington and Lee University	Men	Henry Louis Smith, LL. D.
Lynchburg	Randolph-Macon Woman's College	Women	Dice R. Anderson, Ph. D.
Do	Lynchburg College	Coed	J. T. T. Hundley, A. B.
Do	Virginia Theological Seminary and College (colored).	Coed	Robert C. Woods, D. D.

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V.—Presidents of Universities and Colleges—Continued.

Location.	University or college.	For men, for women, or coeducational.	Name of president.
VIRGINIA—continued.			
Manassas	Eastern College	Coed	R. F. Holliday, A. M.
Richmond	University of Richmond	Coed	F. W. Boatwright, LL. D.
Do	Virginia Union University (colored).	Men	William J. Clark, B. D.
Salem	Roanoke College	Men	Charles J. Smith, D. D.
Do	Elizabeth College	Women	Paul Sieg, A. M.
Sweet Briar	Sweet Briar College	Women	Emilie W. McVea, Litt. D.
Williamsburg	College of William and Mary	Coed	J. A. C. Chandler, LL. D.
WASHINGTON.			
Pullman	State College of Washington	Coed	Ernest O. Holland, Ph. D.
Seattle	University of Washington	Coed	Henry Suzzallo, LL. D.
Spokane	Gonzaga University	Men	John A. McHugh, S. J.
Do	Whitworth College	Coed	Willard H. Robinson, Ph. D.
Tacoma	College of Puget Sound	Coed	Edward H. Todd, D. D.
Walla Walla	Whitman College	Coed	Stephen B. L. Penrose, D. D.
WEST VIRGINIA.			
Bethany	Bethany College	Coed	Cloyd Goodnight, A. M.
Buckhannon	West Virginia Wesleyan College	Coed	Wallace B. Fleming, D. D.
Elkins	Davis and Elkins College	Coed	James E. Allen, A. B.
Morgantown	West Virginia University	Coed	Frank B. Trotter, LL. D.
Salem	Salem College	Coed	S. Orestes Bond, A. M.
WISCONSIN.			
Appleton	Lawrence College	Coed	Samuel Plantz, LL. D.
Ashland	Northland College	Coed	Joseph D. Brownell, D. D.
Beloit	Beloit College	Coed	Melvin A. Brannon, LL. D.
Madison	University of Wisconsin	Coed	Edward A. Birge, LL. D.
Milton	Milton College	Coed	Alfred E. Whitford, A. M., acting.
Milwaukee	Marquette University	Men	Herbert C. Noonan, S. J.
Do	Milwaukee-Downer College	Women	Lucia R. Briggs.
Plymouth	Mission House	Coed	
Prairie du Chien	Campion College	Men	Albert C. Fox, S. J.
Do	St. Mary's College	Women	Mother Mary Seraphia.
Ripon	Ripon College	Coed	Silas Evans, LL. D.
Watertown	Northwestern College	Men	E. E. Kowalke, A. B.
Waukesha	Carroll College	Coed	Wm. A. Ganfield, LL. D.
WYOMING.			
Laramie	University of Wyoming	Coed	Aven Nelson, Ph. D.

VI.—Presidents of Junior Colleges.

Location.	Name of institution.	President.
Montevallo, Ala	Alabama Technical Institute and College for Women.	Thomas W. Palmer, LL. D.
Eureka Springs, Ark	Crescent College	Richard R. Thompson, A. M.
Bakersfield, Calif	Junior College[1]	Paul Vandereike, dean.
Eureka, Calif	do.[1]	George C. Jensen, M. S.
Fullerton, Calif	do.[1]	Lewis E. Plummer, B. S.
Hollister, Calif	do.[1]	
Ontario, Calif	do.[1]	Merton E. Hill, A. M.
Pomono, Calif	do.[1]	H. P. Reynolds, B. S.
Riverside, Calif	do.[1]	A. G. Paul, A. B.
Sacramento, Calif	do.[1]	Belle Cooledge, B. S.
Santa Ana, Calif	do.[1]	E. M. Nealley.
Santa Maria, Calif	do.[1]	Arnold A. Bowhay, jr., A. M.
Turlock, Calif	do.[1]	J. Perry Ratzell, A. M.
Cuthbert, Ga	Andrew College	F. G. Branch, B. S.
Young Harris, Ga	Young L. G. Harris College	John L. Hall, A. B.
Pocatello, Idaho	Idaho Technical Institute	Charles R. Frazier, B. L.
Carlinville, Ill	Blackburn College	Wm. M. Hudson, D. D.
Chicago, Ill	Crane Junior College	Wm. J. Bartholf.

[1] Part of public-school system.

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VI.—Presidents of Junior Colleges—Continued.

Location.	Name of institution.	President.
Godfrey, Ill.	Monticello Seminary	Harriet R. Congdon, A. B.
Joliet, Ill.	Junior College[1]	L. W. Smith, Ph. D.
Mount Carroll, Ill.	Frances Shimer School	Wm. P. McKee, A. M.
Vincennes, Ind.	Vincennes University	W. Hahnen, A. M.
Lamont, Iowa.	Graceland College	George N. Briggs, A. B.
Osage, Iowa.	Cedar Valley Junior College	Victor Y. Craig, A. B.
Danville, Ky.	Kentucky College for Women	M. M. Allen, D. D.
Hopkinsville, Ky.	Bethel Woman's College	John W. Gaines, LL. D.
Lexington, Ky.	Hamilton College for Women	Alice T. Karr, dean.
Do.	Sayre College	Mrs. Maude S. Barnett.
Russellville, Ky.	Bethel College	George F. Dasher, LL. D.
Do.	Logan Female College	George H. Crowell, Ph. D.
Williamsburg, Ky.	Cumberland College	E. W. Elsey, D. D.
Mansfield, La.	Mansfield Female College	R. E. Bobbitt, B. S.
Baltimore, Md.	Mount Vernon College	Wyllys Rede, D. D.
Detroit, Mich.	Junior College[1]	David MacKenzie, A. M.
Grand Rapids, Mich.	....do[1]	Arthur Andrews, M. A.
Highland Park, Mich.	....do[1]	William Prakken, A. B.
Hibbing, Minn.	....do[1]	G. W. Willett, A. M.
Rochester, Minn.	....do[1]	G. H. Vande Bogart, A. M.
St. Paul, Minn.	Concordia College	Theo. Buenger.
Holly Springs, Miss.	Mississippi Synodical College	R. F. Cooper, Ph. D.
Columbia, Mo.	Christian College	Mrs. L. W. St. Claire-Moss, A. B.
Do.	Stephens College	James M. Wood, A. M.
Fayette, Mo.	Howard Payne College	W. L. Halberstadt, A. B.
Fredericktown, Mo.	Marvin College	Burt W. Loomis, A. M.
Fulton, Mo.	Synodical College for Girls	John James, A. B.
Do.	William Woods College	
Kansas City, Mo.	Junior College of Kansas City	Edward M. Bainter, LL. D
Do.	St. Teresa Junior College	Sister Irene O'Hara, A. B.
La Grange, Mo.	La Grange College	James W. Crouch, D. D.
Lexington, Mo.	Central College for Women	Z. M. Williams, D. D.
Mexico, Mo.	Hardin College	Samuel J. Vaughn, A. B.
Nevada, Mo.	Cottey College	J. C. Harmon, A. B.
St. Joseph, Mo.	Junior College[1]	A. S. Wood.
St. Louis, Mo.	The Principia	Mary K. Morgan.
Lenoir, N. C.	Davenport College	James B. Craven.
Louisburg, N. C.	Louisburg College	L. S. Massey, B. D.
Raleigh, N. C.	St. Mary's School	Warren W. Way, D. D.
Do.	Peace Institute	Mary O. Graham.
Weaverville, N. C.	Weaver College	A. M. Martin, A. M.
Milton, Oreg.	Columbia College	H. S. Shangle.
Wessington Springs, S. Dak.	Wessington Springs Junior College	Burton J. Vincent, A. B.
Madisonville, Tenn.	Hiwassee College	J. E. Lowry, A. M.
Pulaski, Tenn.	Martin College	Geo. A. Morgan, D. D.
Arlington, Tex.	Grubbs Vocational College	M. L. Williams, A. M.
Clarendon, Tex.	Clarendon College	G. S. Slover, A. M.
Dallas, Tex.	St. Mary's College	
Decatur, Tex.	Decatur Baptist College	J. L. Ward, A. M.
Greenville, Tex.	Burleson College	W. I. Thames, A. B.
Do.	Wesley College	G. F. Winfield, A. M.
Jacksonville, Tex.	Alexander College	R. G. Boger, A. M.
Marshall, Tex.	College of Marshall	Marion E. Hudson.
Meridian, Tex.	Meridian College	J. Hall Bowman.
Midland, Tex.	Midland College	
Rusk, Tex.	Rusk Junior College	M. W. Robinson, A. M.
San Antonio, Tex.	Westmoorland College	Felix R. Hill, jr., B. D.
Sherman, Tex.	Carr-Burdette College	Cephas Shelbourne.
Do.	Kidd-Key College	Edwin Kidd.
Stephenville, Tex.	John Tarleton Agricultural College	J. T. Davis.
Tahuacana, Tex.	Westminster College	W. B. Sanders, Ph. D.
Terrell, Tex.	Texas Military College	Louis C. Perry, Ph. D.
Thorp Springs, Tex.	Thorp Springs Christian College	A. R. Holton, A. M.
Abingdon, Va.	Stonewall Jackson College	Fred W. Alexander, LL. D.
Blackstone, Va.	Blackstone College for Girls	W. Asbury Christian, D. D.
Bristol, Va.	Sullins College	W. E. Martin, Ph. D.
Do.	Virginia Intermont College	H. G. Noffsinger, A. M.
Daleville, Va.	Daleville College	T. S. Moberman, D. D.
Danville, Va.	Averette College	J. P. Craft.
Marion Va.	Marion College	C. Brown Cox, A. M.
Petersburg, Va.	Southern College	Arthur K. Davis, A. M.
Roanoke, Va.	Virginia College	Mattie P. Harris.
Staunton, Va.	Mary Baldwin College	Marianna P. Higgins.
Everett, Wash.	Junior College[1]	W. J. Marquis.

[1] Part of public-school system.

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VII.—Deans or Directors of University Extension in Certain Universities and Colleges.*

(Note: Directors of university extension in State departments of education are included in Section II, Principal State School Officers.)

Location.	Name of institution.	Dean or director.
University, Ala	University of Alabama	James S. Thomas.
Tucson, Ariz	University of Arizona	Frank C. Lockwood.
Fayetteville, Ark	University of Arkansas	A. M. Harding.
Berkeley, Calif	University of California	Leon J. Richardson.
Boulder, Colo	University of Colorado	Elmore Peterson.
New Haven, Conn	Yale University	Frank E. Spaulding.
Gainesville, Fla	University of Florida	B. C. Riley.
Moscow, Idaho	University of Idaho	L. W. Fluharty.
Chicago, Ill	University of Chicago	H. F. Mallory.
Peoria, Ill	Bradley Polytechnic Institute	Albert F. Siepert.
Bloomington, Ind	Indiana University	R. E. Cavanaugh.
Indianapolis, Ind	Butler College	James W. Putnam.
Ames, Iowa	Iowa State College	D. C. Faber.
Fayette, Iowa	Upper Iowa University	J. P. Van Horn.
Iowa City, Iowa	State University of Iowa	O. E. Klingaman.
Lawrence, Kans	University of Kansas	H. G. Ingham.
Lexington, Ky	University of Kentucky	Wellington Patrick.
Baltimore, Md	Johns Hopkins University	Edward F. Buchner.
Westminster, Md	Western Maryland College	A. M. Isanogle.
Boston, Mass	Boston University	Alexander H. Rice.
Cambridge, Mass	Harvard University	James Hardy Ropes.
Ann Arbor, Mich	University of Michigan	W. D. Henderson.
Minneapolis, Minn	University of Minnesota	Richard R. Price.
Columbia, Mo	University of Missouri	C. H. Williams.
St. Louis, Mo	Washington University	F. W. Shipley.
Lincoln, Nebr	University of Nebraska	A. A. Reed.
Albuquerque, N. Mex	University of New Mexico	David S. Hill.
Elmira, N. Y	Elmira College	Frederick Lent.
New York, N. Y	Columbia University	James C. Egbert.
Do	Hunter College of the City of New York	A. Busse.
Rochester, N. Y	University of Rochester	L. A. Pechstein.
Chapel Hill, N. C	University of North Carolina	Louis R. Wilson.
University, N. Dak	University of North Dakota	A. H. Yoder.
Akron, Ohio	Municipal University of Akron	H. E. Simmons.
Cincinnati, Ohio	University of Cincinnati	G. A. Tauvey.
East Enid, Okla	Phillips University	A. F. Reiter.
Norman, Okla	University of Oklahoma	J. W. Scroggs.
Eugene, Oreg	University of Oregon	Earl Kilpatrick.
Allentown, Pa	Muhlenberg College	Isaac M. Wright.
Philadelphia, Pa	Temple University	
Do	University of Pennsylvania	J. H. Penniman, provost.
Pittsburgh, Pa	University of Pittsburgh	J. H. Kelly.
Bethlehem, Pa	Lehigh University	Percy Hughes.
State College, Pa	Pennsylvania State College	R. L. Sackett.
Providence, R. I	Brown University	
Do	Rhode Island College	John L. Alger.
Columbia, S. C	University of South Carolina	Reed Smith.
Vermillion, S. Dak	University of South Dakota	J. C. Tjaden.
Knoxville, Tenn	University of Tennessee	C. E. Ferris.
Nashville, Tenn	George Peabody College	A. I. Roehm.
Austin, Tex	University of Texas	T. H. Shelby.
Georgetown, Tex	Southwestern University	W. D. Wentz.
Salt Lake City, Utah	University of Utah	F. W. Reynolds.
Charlottesville, Va	University of Virginia	Charles C. Maphis.
Richmond, Va	Virginia Union University	W. J. Clark.
Pullman, Wash	State College of Washington	F. F. Nalder.
Seattle, Wash	University of Washington	Edwin A. Start.
Morgantown, W. Va	West Virginia University	L. B. Hill.
Madison, Wis	University of Wisconsin	Louis E. Reber.
Laramie, Wyo	University of Wyoming	H. C. Dale.

* Owing to the late date on which the compilation was begun, this list is not a complete one.

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VIII.—Presidents or Deans of Schools of Theology.

Location.	Name of institution.	President or dean.
St. Bernard, Ala.	St. Bernard College and Abbey (R. C.).	Bernard Menges, D. D.
Selma, Ala.	Payne University Theological Department (A. M. E.).	Robert Ernest Brooks, D. D.
Talladega, Ala.	Talladega College Theological Seminary (Cong.) (colored).	James P. O'Brien, D. D.
Tuscaloosa, Ala.	Stillman Institute (colored) (Presb.).	Paul H. Moore.
Little Rock, Ark.	Arkansas Baptist College School of Theology.	Joseph A. Booker, D. D.
Do.	St. John's Seminary (R. C.).	Winand H. Aretz, S. T. D.
North Little Rock, Ark.	Jackson Theological Seminary of Shorter College (A. M. E.).	H. G. Montgomery.
Berkeley, Calif.	Berkeley Baptist Divinity School.	Claiborne M. Hill, D. D.
Do.	Pacific School of Religion (undenominational).	William Frederick Bade, Ph. D.
Do.	Pacific Unitarian School for the Ministry.	Earl Morse Wilbur, D. D.
Los Angeles, Calif.	University of Southern California, Maclay College of Theology (M. E.).	John F. Fisher, D. D.
Menlo Park, Calif.	St. Patrick's Seminary (R. C.).	Henry A. Ayrinhac, S. S.
San Anselmo, Calif.	San Francisco Theological Seminary (Presb.)	Warren Hall Landon, D. D.
San Francisco, Calif.	California Bible College (Disc.).	Dennison A. Russell, D. D.
Do.	Church Divinity School of the Pacific (P. E.).	William F. Nichols, D. D.
Denver, Colo.	Iliff School of Theology (M. E.).	Edwin W. Dunlavy, D. D.
Hartford, Conn.	Hartford Seminary Foundation (Interdenominational).	M. W. Jacobus, D. D.
Middletown, Conn.	Berkeley Divinity School (P. E.).	William Palmer Ladd, D. D.
New Haven, Conn.	Yale University Divinity School (nonsectarian).	Charles Reynolds Brown, D. D.
Washington, D. C.	Catholic University of America, School of Sacred Sciences (R. C.).	John A. Ryan, S. T. D.
Do.	Howard University Theological Department (colored) (interdenominational).	Davie Butler Pratt, D. D.
Washington, D. C. (Takoma Park).	Washington Missionary College, School of Theology (Seventh Day Advent.).	Henry S. Prenier, A. M.
St. Leo, Fla.	St. Leo College and Abbey (R. C.).	Charles H. Mohr, D. D.
Atlanta, Ga.	Atlanta Theological Seminary (Cong.).	Frank R. Shipman, B. D.
Do.	Emory University, Candler School of Theology (M. E. Church South).	Franklin N. Parker, D. D.
Do.	Gammon Theological Seminary (colored) (M. E.).	Philip M. Watters, D. D.
Do.	Morehouse College, Divinity School (colored) (Bapt.).	C. C. Smith, D. D.
Do.	Morris Brown University, Turner Theological Seminary (A. M. E.).	J. A. Lindsey, D. D.
Aurora, Ill.	Aurora College Biblical Department (Advent Chris.).	Orrin R. Jenks, D. D.
Chicago, Ill.	Bethany Bible School.	Albert C. Wieand, D. D.
Do.	Chicago Theological Seminary (Cong.).	Ozora Stearns Davis, D. D.
Chicago (Maywood), Ill.	Evangelical Lutheran Theological Seminary.	J. E. Whitteke, D. D.
Chicago, Ill.	McCormick Theological Seminary (Presb.).	Andrew C. Zenos, D. D.
Do.	University of Chicago Divinity School (Bapt.).	Shailer Mathews, D. D.
Do.	Western Theological Seminary (P. E.).	William C. De Witt, S. T. D.
Evanston, Ill.	Garrett Biblical Institute (M. E.).	Charles M. Stuart, D. D.
Do.	Norwegian-Danish Theological Seminary (M. E.).	Nels E. Simonsen, D. D.
Do.	Swedish Theological Seminary (M. E.).	F. A. Lundberg, D. D.
Greenville, Ill.	Greenville College, Department of Theology (Free Meth.).	John La Due, A. M.
Naperville, Ill.	Evangelical Theological Seminary (Ev. Asso.).	G. B. Kimmel, D. D.
Rock Island, Ill.	Augustana College and Theological Seminary (Ev. Luth.).	C. E. Lindberg, D. D.
Springfield, Ill.	Concordia Theological Seminary (Ev. Luth.).	Louis Wessel.
Merom, Ind.	Union Christian College Biblical Department (Chris.).	Charles B. Hershey, D. D.
St. Meinrad, Ind.	St. Meinrad Seminary (R. C.).	Albert Kleber, O. S. B.
Upland, Ind.	Reade Theological Seminary, Taylor University (M. E.).	Newton Wray, D. D.
Des Moines, Iowa.	Drake University College of the Bible (Chris.).	Jesse C. Caldwell, B. D.
Do.	Grand View College Theological School (Luth.).	Carl P. Höjbjerg.
Dubuque, Iowa.	Theological Seminary at Dubuque University (Presb.).	W. S. Rustor, D. D.
Do.	Wartburg Theological Seminary (Ev. Luth.).	M. Fritschel, D. D.
Atchison, Kans.	St. Benedict's College, School of Theology (R. C.).	Martin Veth, S. T. L.

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VIII.—Presidents or Deans of Schools of Theology—Continued.

Location.	Name of institution.	President or dean.
Kansas City, Kans.	Kansas City Baptist Theological Seminary.	Philip W. Crannell, D. D.
Do.	Kansas City University College of Theology (Meth. Prot.).	Herbert T. Stephens, D. D.
McPherson, Kans.	McPherson College Bible School (Breth.)	J. W. Deeter, B. D.
Kingswood, Ky.	Department of Theology, Kingswood College.	W. B. Dunkum, D. D.
Lexington, Ky.	College of the Bible affiliated with Transylvania College (Disc.).	A. W. Fortune, Ph. D.
Louisville, Ky.	Presbyterian Theological Seminary of Kentucky.	Charles R. Hemphill, D. D.
Do.	Southern Baptist Theological Seminary.	Edgar Y. Mullins, D. D.
Do.	Simmons University Theological Department (colored) (Bapt,).	M. B. Lanier, B. D.
Bangor, Me.	Bangor Theological Seminary (Cong.)	Warren J. Moulton, D. D.
Baltimore, Md.	St. Mary's Seminary (R. C.)	Edward R. Dyer, D. D.
Emmitsburg, Md.	Mount St. Mary College, Ecclesiastical Seminary (R. C.).	B. J. Bradley, LL. D.
Westminister, Md.	Westminister Theological Seminary (Meth. Prot.).	Hugh Latimer Elderdice, D. D.
Woodstock, Md.	Woodstock College (R. C.)	William J. Duane, S. J
Boston, Mass.	Boston University School of Theology (M. E.)	James A. Bebee, D. D.
Boston (Brighton), Mass.	St. John's Boston Ecclesiastical Seminary (R. C.).	John B. Peterson, Ph. D.
Cambridge, Mass.	Andover Theological Seminary (Cong.).	
Do.	Episcopal Theological School	Henry B. Washburn, D. D.
Do.	Harvard University Divinity School (Nonsect.).	William Wallace Fenn, D. D.
Do.	New-Church Theolcgical School (Ch. of N. Jeru.).	William L. Worcester, A. B.
Newton Centre, Mass.	Newton Theological Institution (Bapt.).	George Edwin Horr, D. D.
Tufts College, Mass.	Tufts College, Crane Theological School (Univ.).	Lee S. McCollester, S. T. D.
Berrien Springs, Mich.	Emmanuel Missionary College Theological School.	T. M. French, B. Th.
Grand Rapids, Mich.	Theological School and Calvin College (Chris. Ref. Ch.).	J. J. Hiemenga, B. D.
Hancock, Mich.	Suomi College and Theclogical Seminary (Finnish Ev. Luth.).	John Wargelin, A. B.
Holland, Mich.	Western Theological Seminary (Ref. Ch. in Amer.).	James F. Zwemer, D. D.
Owosso, Mich.	Bible Holiness Seminary School of Theology.	C. G. Taylor.
Collegeville, Minn.	St. John's University and Abbey (R.C.).	Alphonse Sansen, A. M.
Faribault, Minn.	Seabury Divinity School (P. E.)	Frank A. McElwain, D. D.
Minneapolis, Minn.	Augsburg Seminary (Ev. Luth.)	George Sverdrup, M. A.
St. Paul, Minn.	Bethel Theological Seminary (Bapt.)	Carl G. Lagergren, D. D.
Do.	Phalen Luther Seminary	H. Ernst, D. D.
Do.	St. Paul Theological Seminary (R. C.)	Francis J. Schaefer, D. D.
St. Paul (St. Anthony Park), Minn.	Luther Theological Seminary	Marcus Olaus Böckman, D. D.
Columbia, Mo.	Bible College of Missouri	Granville D. Edwards, A. M.
Canton, Mo.	School of Religion in Culver-Stockton College.	Henry B. Robison, Ph. D.
St. Louis, Mo.	Concordia Theological Seminary (Ev. Luth.).	John H. C. Fritz.
Do.	Eden Theological Seminary of the Evangelical Church of North America.	S. D. Press.
Do.	St. Louis University School of Divinity (R. C.).	Francis J. O'Boyle, S. J.
St. Louis, Mo. (University City).	Xenia Theological Seminary (U. Presb.).	Joseph Kyle, D. D.
Warrenton, Mo.	Central Wesleyan College German Theological Seminary (M. E.).	E. S. Havighurst, D. D.
Webster Groves, Mo.	Kenrick Theological Seminary (R. C.)	M. S. Ryan, C. M., D. D.
Blair, Nebr.	Dana College, Trinity Seminary (Ev. Luth.).	L. A. Laursen.
Fremont, Nebr.	Western Theological Seminary of Ev. Luth. Church, Midland College.	Holmes Dysinger, D. D.
Omaha, Nebr.	Presbyterian Theological Seminary	James M. Wilson, D. D.
Bloomfield, N. J.	Bloomfield Theological Seminary (Presb.)	Harry E. Richards, M. D.
Madison, N. J.	Drew Theological Seminary (M. E.)	Ezra Squier Tipple, D. D.
New Brunswick, N. J.	Theological Seminary of the Reformed Church in America.	J. Preston Searle, D. D.
Princeton, N. J.	Princeton Theological Seminary (Presb.)	J. Ross Stevenson, D. D.
South Orange, N. J.	Immaculate Conception Theological Seminary (R. C.).	James F. Mooney, D. D.
Alfred, N. Y.	School of Religion at Alfred University (7th Day Bapt.).	Arthur E. Main, D. D.
Auburn, N. Y.	Auburn Theological Seminary (Presb.)	George B. Stewart, D. D.
Brooklyn, N. Y.	St. John's College Diocesan Theological Seminary (R. C.).	Charles J. Gorman, C. M.

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VIII.—Presidents or Deans of Schools of Theology—Continued.

Location.	Name of institution.	President or dean.
Buffalo, N. Y.	German Martin Luther Seminary	Rudolph Grabau.
Canton, N. Y.	Theological School of St. Lawrence University (Univ.).	John Murray Atwood, D. D.
Esopus, N. Y.	Mount St. Alphonsus Theological Seminary, (R. C.).	Florian J. Reichert, C. SS. R.
Geneva, N. Y.	De Lancy Divinity School (P. E.)	G. Sherman Burrows, D. D., warden.
Hamilton, N. Y.	Theological Seminary, Colgate University (nonsect.).	John F. Vichert, D. D.
Hartwick Seminary, N. Y.	Hartwick Seminary (Ev. Luth.)	A. E. Deitz, D. D.
Houghton, N. Y.	Houghton Wesleyan Methodist Theological Seminary.	James S. Luckey.
New York, N. Y.	Bible Teachers Training School (interdenominational).	Wilbert W. White, D. D.
Do.	General Theological Seminary of the Protestant Episcopal Church.	Hughell E. W. Fosbroke, D. D.
Do.	Jewish Theological Seminary of America.	Cyrus Adler, Ph. D., acting president.
Do.	Union Theological Seminary (interdenominational).	Arthur C. McGiffert, D. D.
Niagara University, N. Y.	Niagara University Seminary of Our Lady o Angels (R. C.).	Francis J. Dodd, C. M.
North Chili, N. Y.	A. M. Chesbrough Seminary (Free Meth.)	W. R. Reynolds, principal.
Rochester, N. Y.	Rochester Theological Seminary (Bapt.).	Clarence A. Barbour, D. D.
Do.	St. Bernard's Theological Seminary (R. C.)	H. B. Meehan.
St. Bonaventure, N. Y.	St. Bonaventure Seminary and College (R. C.).	Benvenute Ryan, O. F. M.
Yonkers, N. Y.	St. Joseph's Seminary, Cathedral College (R. C.).	John P. Chidwick, D. D.
Ayden, N. C.	Ayden Seminary (Free Will Bapt.)	J. E. Sawyer, A. B.
Belmont, N. C.	Belmont Abbey Seminary (R. C.)	Leo Haid, D. D.
Charlotte, N. C.	Biddle University School of Theology (colored) (Presb.).	H. L. McCrorey, D. D.
Raleigh, N. C.	Shaw University Theological School (colored) (Bapt.).	Joseph L. Peacock.
Salisbury, N. C.	Hood Theological Seminary of Livingstone College (A. M. E. Z.).	William O. Carrington, D. D.
Ashland, Ohio	Ashland College, Theological Seminary (Brethren).	J. H. Miller, A. B.
Berea, Ohio	Baldwin-Wallace College, Nast Theological Seminary (M. E.).	Frederic Cramer, D. D.
Bluffton, Ohio	Menonite Seminary, Bluffton College	P. E. Whitmer, B. D.
Carthagena, Ohio	St. Charles Theological Seminary (R. C.).	Boniface Russ, C. PP. S.
Cincinnati, Ohio	Hebrew Union College	Kaufmann Kohler, Ph. D.
Do.	Lane Theological Seminary (Presb.)	William McKibbin, D. D.
Cincinnati (Mt. Washington Station, 1).	Mount St. Mary's Seminary of the West (R. C.).	Francis J. Beekman, S. T. D.
Cleveland, Ohio	St. Mary's Theological Seminary (R. C.).	James A. McFadden, D. D.
Columbus, Ohio	Evangelical Lutheran Theological Seminary, Capital University.	R. C. H. Lenski, D. D.
Dayton, Ohio	Bonebrake Theological Seminary (U. Breth.).	A. T. Howard.
Do.	Central Theological Seminary of the Reformed Church in the United States.	Henry J. Christman, D. D.
Findlay, Ohio	Findlay College, Department of Theology (Church of God).	Charles T. Fox, Ph. D.
Gambier, Ohio	Kenyon College Divinity School (P. E.)	William Foster Peirce, D. D., acting dean.
Oberlin, Ohio	Graduate School of Theology of Oberlin College (Nonsect.).	Edward I. Bosworth, D. D.
Springfield, Ohio	Wittenberg College, Hamma Divinity School (Ev. Luth.).	David H. Bauslin, LL. D.
Wilberforce, Ohio	Wilbeforce University, Payne Theological Seminary (A. M. E.).	George F. Woodson, D. D.
Eugene, Oreg.	Eugene Bible University (Chris. or Disc.)	Eugene C. Sanderson, D. D.
Salem, Oreg.	Kimball School of Theology	Eugene C. Hickman, D. D.
Beatty, Pa.	St. Vincent's Seminary (R. C.)	Ambrose Kohlbeck, D. D.
Bethlehem, Pa.	Moravian College Theological Seminary	J. Taylor Hamilton, D. D.
Bryn Athyn, Pa.	The Academy of the New Church, Theological Seminary (Ch. of N. Jeru.).	Alfred Acton.
Chester, Pa.	Crozer Theological Seminary (Bapt.)	Milton G. Evans, D. D.
Gettysburg, Pa.	Theological Seminary of the General Synod of Ev. Luth. Church in the United States.	J. A. Singmaster, D. D.
Huntingdon, Pa.	Juniata College, School of Theology (Ch. of the Breth.).	Tobias T. Myers, D. D.
Lancaster, Pa.	Theological Seminary of the Reformed Church in the United States.	Irwin H. De Long.
Lincoln University, Pa.	Lincoln University Theological Department (Presb.) (colored).	Robert M. Labaree, D. D.
Loretto, Pa.	St. Francis College and Seminary (R. C.).	Damien J. Segour, S. T. L.

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VIII.—PRESIDENTS OR DEANS OF SCHOOLS OF THEOLOGY—Continued.

Location.	Name of institution.	President or dean.
Meadville, Pa	Meadville Theological School (Unita.)	Franklin C. Southworth, D. D.
Overbrook, Pa	St. Charles Borromeo Seminary (R. C.)	Edmond J. Fitz Maurice, D. D., rector.
Philadelphia (Mount Airy), Pa.	Lutheran Theological Seminary at Philadelphia.	Henry Eyster Jacobs, D. D.
Philadelphia, Pa	Divinity School of the Protestant Episcopal Church.	George G. Bartlett, S. T. D.
Philadelphia (Germantown), Pa.	St. Vincent Seminary (R. C.)	Martin J. B. Coke, C. M., rector.
Philadelphia, Pa	Temple University, School of Theology (Nonsect.).	Walter B. Shumway, D. D.
Pittsburgh, Pa	Pittsburgh Theological Seminary (United Presb.).	John McNaugher, D. D.
Do	Reformed Presbyterian Theological Seminary.	Richard Cameron Wylie, D. D.
Do	Western Theological Seminary (Presb.).	James A. Kelso, D. D.
Selinsgrove, Pa	Susquehanna University School of Theology (Ev. Luth.).	Franklin P. Manhart, D. D.
Villanova, Pa	Augustinian Monastery of St. Thomas of Villanova (R. C.).	Joseph A Hickey, O. S. A.
Columbia, S. C	Allen University, Dickerson Theological Seminary (A. M. E.).	I. H. Alston, B. D.
Columbia, S. C	Benedict College, Theological School (Bapt.).	T. G. Brownson, D. D.
Do	Columbia Theological Seminary (Presb.)	John M. Wells, D. D.
Do	Southern Lutheran Theological Seminary.	Andrew G. Voigt, D. D.
Due West, S. C	Erskine Theological Semínary (A. R. Presb.).	F. Y. Pressly, D. D.
Jackson, Tenn	Lane College Theological School (colored) (M. E.).	Isaac Snowden, B. D.
Kimberlin Heights, Tenn	Johnson Bible College	Ashley Sidney Johnson, LL. D.
Knoxville, Tenn	Knoxville College Theological School (colored) (Un. Presb.).	J. Kelly Giffin, D. D.
Nashville, Tenn	Vanderbilt University School of Religion (nonsectarian)	O. E. Brown, D. D.
Sewanee, Tenn	University of the South Theological Department (P. E.).	Cleveland Keith Benedict, D. D.
Austin, Tex	Austin Presbyterian Theological Seminary.	Thomas W. Currie, D. D.
Dallas, Tex	School of Theology, Southern Methodist University.	Pane B. Kern, D. D.
Fort Worth, Tex	Southwestern Baptist Theological Seminary.	Lee R. Scarborough, D. D.
Do	Brite College of the Bible, Texas Christian University.	Colby D. Hall, A. M.
Marshall, Tex	Bishop College Theological Department (colored) (Bapt.).	Charles H. Maxson, B. Di.
Peniel, Tex	Peniel Academy and Theological Seminary (Nazarine).	D. F. Brooks, D. D.
Seguin, Tex	Guadalupe College, Department of Theology (colored) (Bapt.).	
Waco, Tex	Paul Quinn College, Department of Theology (A. M. A.).	Isaac M. Burgan, D. D.
Bridgewater, Va	Bridgewater College Bible Department (Breth.).	William T. Sanger, Ph. D.
Lynchburg, Va	Virginia Theological Seminary and College (Bapt.).	J. E. Briggs, D. D.
Petersburg, Va	Bishop Payne Divinity School (P. E.)	C. B. Bryan, D. D.
Richmond, Va	Union Theological Seminary (Presb.)	Walter W. Moore, D. D.
Do	Virginia Union University Theological Department (colored) (Bapt.).	William J. Clark, B. D., president.
Theological Seminary, Va	Theological Seminary of the Protestant Episcopal Church in Virginia.	Berryman Green, D. D.
Spokane, Wash	Mount St. Michael's Divinity School (R. C.).	William J. Benn, S. J., rector.
Bethany, W. Va	Bethany College, School of Religion (Disc.).	Cloyd Goodnight, A. M.
Mount Calvary, Wis	St. Lawrence College (R. C.)	Camillus Becker.
Nashotah, Wis	Nashotah House (Episcopal)	Benj. F. P. Ivins.
Oconomowoc, Wis	College of the Immaculate Conception Theological School (R. C.).	Thomas P. Brown, C. SS. R., rector.
Plymouth, Wis	The Mission House of the Reformed Church.	A. E. Dahlmann, D. D.
St. Francis, Wis	Provincial Seminary of St. Francis de Sales (R. C.).	Joseph Rainer, V. G.
Wauwatosa, Wis	Evangelical Lutheran Theological Seminary.	John Schaller.

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IX.—Presidents or Deans of Schools of Law.

Location.	Name of institution.	President or dean.
University, Ala.	University of Alabama, Law Department.	Albert J. Farrah, LL. B.
Tucson, Ariz.	University of Arizona, School of Law.	Samuel F. Fegtly, LL. B.
Little Rock, Ark.	Arkansas Law School.	John H. Carmichael, LL. B.
Berkeley, Calif.	University of California School of Jurisprudence.	William Carey Jones, M. A.
Los Angeles, Calif.	University of Southern California, College of Law.	Frank M. Porter, LL. M.
Do.	Southwestern University, School of Law.	Rollin L. McNitt, LL. B.
San Francisco, Calif.	Hastings College of Law, University of California.	Maurice E. Harrison, J. D.
Do.	Law Department of St. Ignatius University.	Matt. I. Sullivan, LL. D.
Do.	San Francisco Law School.	James A. Ballentine, A. B.
Do.	San Francisco Young Men's Christian Association Law School.	J. E. White, LL. B.
Santa Clara, Calif.	University of Santa Clara Institute of Law.	Clarence C. Coolidge, J. D.
Stanford University, Calif.	Leland Stanford Junior University, Law School.	Charles A. Huston, S. J. D.
Boulder, Colo.	University of Colorado, School of Law.	John D. Fleming, LL. D.
Denver, Colo.	University of Denver Law School.	George C. Manly, LL. B.
New Haven, Conn.	Yale University School of Law.	Thomas Walter Swan, LL. B.
Washington, D. C.	Catholic University of America, School of Law.	Peter J. McLaughlin, J. D., acting.
Do.	Georgetown University School of Law.	George E. Hamilton, LL. D.
Do.	George Washington University Law School.	Merton LeRoy Ferson, LL. B.
Do.	Howard University School of Law (colored).	Mason N. Richardson, LL. B.
Do.	National University Law School.	Charles F. Carusi, LL. D.
Do.	Washington College of Law.	Emma M. Gillett, LL. M.
Deland, Fla.	John B. Stetson University, College of Law.	Richard A. Rasco, LL. B.
Gainesville, Fla.	University of Florida, College of Law.	Harry R. Trusler, LL. B.
Athens, Ga.	University of Georgia, Law Department.	Sylvanus Morris, LL. D.
Atlanta, Ga.	Atlanta Law School.	Hamilton Douglas, LL. B.
Do.	Emory University, Lamar School of Law.	Samuel C. Williams, LL. B.
Macon, Ga.	Mercer University Law School.	William H. Felton, B. L.
Moscow, Idaho.	University of Idaho, College of Law.	O. P. Cockerill, LL. B.
Bloomington, Ill.	Illinois Wesleyan University, Bloomington Law School.	Charles L. Capen, A. M.
Chicago, Ill.	Chicago Law School.	Howard Henderson, LL. D.
Do.	Chicago-Kent College of Law.	Webster H. Burke, LL. M.
Do.	De Paul University Law School.	Francis X. Busch, LL. D.
Do.	John Marshall Law School.	Edward T. Lee, LL. B.
Do.	Loyola University College of Law.	Arnold D. McMahon, LL. B.
Do.	Northwestern University Law School.	John H. Wigmore, LL. D.
Do.	University of Chicago Law School.	James Parker Hall, LL. B.
Urbana, Ill.	University of Illinois, College of Law.	Henry C. Jones, S. J. D.
Bloomington, Ind.	Indiana University, School of Law.	Charles M. Hepburn, LL. D.
Indianapolis, Ind.	Benjamin Harrison Law School.	Wm. W. Thornton, LL. B.
Do.	Indiana Law School, University of Indianapolis.	James A. Rohbach, LL. D.
Notre Dame, Ind.	University of Notre Dame, College of Law.	Francis P. Vurpillet, LL. B.
Valparaiso, Ind.	Valparaiso University Law School.	M. J. Bowman, jr., LL. B.
Des Moines, Iowa.	Drake University College of Law.	Charles J. Hilkey, J. D.
Iowa City, Iowa.	State University of Iowa, College of Law.	Dudley O. McGovney, LL. B.
Lawrence, Kans.	University of Kansas Law School.	
Topeka, Kans.	Washburn College School of Law.	Charles E. Carpenter, LL. B.
Lexington, Ky.	University of Kentucky, College of Law.	William T. Lafferty, A. M.
Louisville, Ky.	Jefferson School of Law.	Thomas R. Gordon.
Do.	Simmons University Central Law School (colored).	C. H. Parrish, LL. D.
Do.	University of Louisville, Law Department.	Edward W. Hines, LL. D.
Baton Rouge, La.	Louisiana State University, Law Department.	Robert L. Tullis, LL. B.
New Orleans, La.	Loyola University Law School.	C. Cage, LL. D.
Do.	Tulane University of Louisiana, College of Law.	Charles Payne Fenner, LL. B.
Orono, Me.	University of Maine, College of Law.	
Baltimore, Md.	University of Maryland Law School.	Henry D. Harlan, LL. D.
Boston, Mass.	Boston University School of Law.	Homer Albers, LL. B.
Do.	Portia Law School.	Arthur W. MacLean, J. M.
Do.	Suffolk Law School.	Gleason L. Archer, LL. B.
Do.	Northeastern College School of Law.	Everett Avery Churchill, A. B.
Cambridge, Mass.	Harvard University Law School.	Roscoe Pound, LL. D.
Ann Arbor, Mich.	University of Michigan Law School.	Henry M. Bates, LL. B.
Detroit, Mich.	Detroit College of Law (conducted by Detroit Young Men's Christian Association).	William Krichbaum, LL. B.

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IX.—PRESIDENTS OR DEANS OF SCHOOLS OF LAW—Continued.

Location.	Name of institution.	President or dean.
Detroit, Mich	University of Detroit Law School	P. J. M. Hally, LL. D.
Minneapolis, Minn	University of Minnesota Law School	Everett Fraser, LL. B.
Do	Minnesota College of Law (Inc.)	George T. Simpson, B. L.
St. Paul, Minn	St. Paul College of Law	Oscar Hallam, LL. B.
University, Miss	University of Mississippi School of Law	T. C. Kimbrough, LL. B.
Columbia, Mo	University of Missouri School of Law	J. P. McBaine, LL. B.
Kansas City, Mo	Kansas City School of Law	Edward D. Ellison.
St. Louis, Mo	Benton College of Law	George L. Corlis, LL. B.
Do	City College of Law and Finance	Eustace C. Wheeler, LL. B.
Do	St. Louis University Institute of Law	Paul Bakewell, LL. D.
Do	Washington University, St. Louis Law School.	Richard L. Goode, LL. D.
Missoula, Mont	State University of Montana College of Law.	C. W. Leaphart, LL. B.
Lincoln, Nebr	University of Nebraska College of Law	Warren A. Seavey, LL. B.
Omaha, Nebr	Creighton University, Creighton College of Law.	Louis J. TePoel, LL. B.
Do	University of Omaha, Omaha School of Law.	Alexander C. Troup, LL. B.
Newark, N. J	New Jersey Law School	Richard D. Currier, LL. B.
Albany, N. Y	Union University, Albany Law School	J. Newton Fiero, LL. D.
Brooklyn, N. Y	St. Lawrence University, Brooklyn Law School.	William P. Richardson, LL. D
Buffalo, N. Y	University of Buffalo, Buffalo Law School.	Carlos C. Alden, J. D.
Ithaca, N. Y	Cornell University College of Law	George G. Bogert, LL. B.
New York, N. Y	Columbia University School of Law	Harlan F. Stone, LL. B.
Do	Fordham University School of Law	Francis P. Garvan, LL. D.
Do	New York Law School	George Chase, LL. B.
Do	New York University Law School	Frank H. Sommer, LL. D.
Syracuse, N. Y	Syracuse University College of Law	Frank R. Walker, D. C. L.
Chapel Hill, N. C	University of North Carolina School of Law.	Lucius Polk McGehee, A. B.
Durham, N. C	Trinity College Law School	Samuel Fox Mordecai, LL. D.
Wake Forest, N. C	Wake Forest College Law School	Needham Y. Gulley, LL. D.
University, N. Dak	University of North Dakota School of Law.	Hugh E. Willis, LL. M.
Ada, Ohio	Ohio Northern University, College of Law.	Wm. P. Henderson.
Cincinnati, Ohio	University of Cincinnati, College of Law.	Alfred B. Benedict, LL. B.
Do	Young Men's Christian Association Night Law School.	Gilbert Bettman, LL. B.
Cleveland, Ohio	Baldwin-Wallace College, Cleveland Law School.	Willis Vickery, LL. D.
Do	Western Reserve University, Franklin T. Backus Law School.	Walter Thomas Dunmore, LL. B.
Columbus, Ohio	Ohio State University College of Law	John Jay Adams, LL. D.
Toledo, Ohio	St. John's University College of Law	John P. Manton.
Do	Toledo University College of Law	Aaron B. Cohn, LL. B.
Norman, Okla	University of Oklahoma School of Law	Julian C. Monnet, LL. B.
Eugene, Oreg	Law School, University of Oregon	William G. Hale, LL. B.
Salem, Oreg	Willamette University College of Law	I. H. Van Winkle, LL. B.
Carlisle, Pa	Dickinson School of Law	William Trickett, LL. D.
Philadelphia, Pa	Temple University School of Law	Francis Chapman, LL. B.
Do	University of Pennsylvania Law School	William E. Mikell, LL. M.
Pittsburgh, Pa	Duquesne University School of Law	Joseph M. Swearingen, LL. D.
Do	University of Pittsburgh, Pittsburgh Law School.	A. M. Thompson, LL. M.
Manila, P. I	University of the Philippines, College of Law.	Jorge Bocobo, LL. B.
Rio Piedras, Porto Rico	University of Porto Rico College of Law.	C. W. St. John, A. M.
Columbia, S. C	University of South Carolina Law School	J. Nelson Frierson, LL. B.
Vermilion, S. Dak	University of South Dakota College of Law.	Marshall McKusick, LL. B.
Chattanooga, Tenn	Chattanooga College of Law	W. B. Swaney, LL. M.
Knoxville, Tenn	University of Tennessee College of Law.	Malcolm McDermott, LL. B.
Lebanon, Tenn	Cumberland University Law School	Edward Ewing Beard, LL. B.
Nashville, Tenn	Vanderbilt University Law School	John Bell Keeble, LL. B.
Austin, Tex	University of Texas School of Law	John Charles Townes, LL. D.
Salt Lake City, Utah	University of Utah School of Law	William H. Leary, J. D.
Charlottesville, Va	University of Virginia, Department of Law.	William Minor Lile, LL. D.
Lexington, Va	Washington and Lee University School of Law.	Joseph R. Long, LL. D.
Richmond, Va	Richmond University School of Law	James H. Barnett, jr., LL. B., secretary.
Seattle, Wash	University of Washington Law School	John T. Condon, LL. M.
Spokane, Wash	Gonzaga University, Department of Law	Edward J. Cannon, LL. D.
Morgantown, W. Va	West Virginia University College of Law.	Henry Craig Jones, LL. B.
Madison, Wis	University of Wisconsin Law School	Harry Sanger Richards, LL. D.
Milwaukee, Wis	Marquette University College of Law	Max Schoetz, LL. B.
Laramie, Wyo	University of Wyoming Law School	E. F. Albertsworth, LL. D.

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X.—Presidents or Deans of Schools of Medicine.

[(H) designates the medical school as Homeopathic.]

Location.	Name of institution.	President or dean.
University, Ala	University of Alabama, Department of Medicine.	Clyde Brooks, M. D.
Little Rock, Ark	University of Arkansas, School of Medicine.	Morgan Smith, M. D.
Loma Linda and Los Angeles, Calif.	College of Medical Evangelists	P. T. Magan, M. D.
San Francisco, Calif	Leland Stanford Junior University School of Medicine.	William Ophuls, M. D.
Do	University of California, Medical School[1].	
Boulder and Denver, Colo	University of Colorado, School of Medicine.	Charles N. Meader, M. D.
New Haven, Conn	Yale University School of Medicine	Milton Charles Winternitz, M. D.
Washington, D. C	George Washington University, Medical School.	William C. Borden, M. D.
Do	Georgetown University, School of Medicine.	George M. Kober, M. D.
Do	Howard University, Medical College (colored).	Edward A. Balloch, M. D.
Atlanta, Ga	School of Medicine, Emory University	W. S. Elkin, M. D.
Augusta, Ga	Medical Department, University of Georgia.	William H. Doughty, jr., M. D.
Chicago, Ill	Loyola University, School of Medicine	Louis D. Moorhead, M. D.
Do	Chicago Medical School	Charles Hill, M. D.
Do	Hahnemann Medical College and Hospital (H).	John C. Blake, Ph. D.
Do	Northwestern University, Medical School	Arthur Isaac Kendall, M. D.
Do	Rush Medical College, University of Chicago.	John Milton Dodson, M. D.
Do	University of Illinois, College of Medicine.	Albert C. Eycleshymer, M. D.
Bloomington and Indianapolis, Ind.	Indiana University School of Medicine	Charles P. Emerson, M. D.
Iowa City Iowa	State Universty of Iowa, College of Medicine.[2]	Lee W. Dean, M. D.
Rosedale and Lawrence, Kans.	University of Kansas, School of Medicine.	Merwin T. Sudler, M. D., associate dean.
Louisville, Ky	University of Louisville, Medical Department.	Henry Enos Tuley, M. D.
New Orleans, La	Tulane University of Louisiana, School of Medicine.	
Baltimore, Md	Johns Hopkins University, Medical Department.	J. Whitridge Williams, M. D.
Do	University of Maryland, School of Medicine and College of Physicians and Surgeons.	J. M. H. Rowland, M. D.
Boston, Mass	College of Physicians and Surgeons	Carolus M. Cobb, M. D.
Do	Harvard University, Medical School	David Linn Edsall, M. D.
Do	Tufts College, Medical School	Charles F. Painter, M. D.
Do	Boston University, School of Medicine	John P. Sutherland, M. D.
Cambridge, Mass	Middlesex College of Medicine and Surgery.	Roger S. York, M. D.
Ann Arbor, Mich	University of Michigan, Medical School.	
Do	University of Michigan, Homeopathic Medical School.	Wilbert B. Hinsdale, M. D.
Detroit, Mich	Detroit College of Medicine and Surgery	W. H. MacCraken, M. D.
Minneapolis, Minn	University of Minnesota, Medical School.	E. P. Lyon, M. D.
University, Miss	University of Mississippi, School of Medicine.	Waller S. Leathers, M. D.
Columbia, Mo	University of Missouri, School of Medicine.	Guy L. Noyes, M. D.
Kansas City, Mo	Kansas City College of Medicine and Surgery.	
Do	Kansas City University of Physicians and Surgeons.	A. L. McKenzie, M. D.
St. Louis, Mo	St. Louis College of Physicians and Surgeons.	Waldo Briggs, M. D.
Do	St. Louis University, School of Medicine.	Hanau W. Loeb, M. D.
Do	Washington University, Medical School.	Nathaniel Allison, M. D
Lincoln and Omaha, Nebr	University of Nebraska, College of Medicine.	Irving S. Cutter, M. D.
Omaha, Nebr	Creighton University, College of Medicine.	Herman von W. Schulte, M. D.
Hanover, N. H	Dartmouth Medical School	John M. Gile, M. D.
Albany, N. Y	Albany Medical College, Union University.	Thomas Ordway, M. D.
Brooklyn, N. Y	Long Island College Hospital	Adam M. Miller, A. M.
Buffalo, N. Y	University of Buffalo, Medical Department.	C. Sumner Jones, M. D.

[1] Includes electives in homeopathy in the curriculum of the medical school.
[2] Includes an elective chair in homeopathic materia medica and therapeutics.

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X.—PRESIDENTS OR DEANS OF SCHOOLS OF MEDICINE—Continued.

Location.	Name of institution.	President or dean.
New York, N. Y.	Columbia University College of Physicians and Surgeons.	William Darrach, M. D.
New York and Ithaca, N. Y.	Cornell University, Medical College	Walter L. Niles, M. D.
New York, N. Y.	University and Bellevue Hospital Medical College.	Samuel A. Brown, M. D.
Do.	New York Homeopathic Medical College and Flower Hospital.	Israel S. Kleiner, M. D., acting.
Syracuse, N. Y.	Syracuse University, College of Medicine.	John L. Heffron, M. D.
Chapel Hill, N. C.	University of North Carolina, School of Medicine.	Isaac H. Manning, M. D.
Wake Forest, N. C.	Wake Forest College, School of Medicine.	Thurman D. Kitchin, M. D.
University, N. Dak.	University of North Dakota, School of Medicine.	Harley E. French, M. D.
Cincinnati, Ohio.	University of Cincinnati, College of Medicine.	Henry Page, M. D.
Do.	Eclectic Medical College	Rolla L. Thomas, M. D.
Cleveland, Ohio.	Western Reserve University, School of Medicine.	Carl A. Hamann, M. D.
Columbus, Ohio.	Ohio State University, College of Medicine.	E. F. McCampbell, M. D.
Do.	Ohio State University, College of Homeopathic Medicine.	Claude A. Burrett, M. D.
Norman and Oklahoma City, Okla.	University of Oklahoma, School of Medicine.	Le Roy Long, M. D.
Portland, Oreg.	University of Oregon, Medical School	Richard B. Dillehunt, M. D.
Philadelphia	Hahnemann Medical College and Hospital of Philadelphia (H.)	W. A. Pearson, M. D.
Do.	Jefferson Medical College	Ross V. Patterson, M. D.
Do.	Temple University, School of Medicine	Frank C. Hammond, M. D.
Do.	Medical School of the University of Pennsylvania.	William Pepper, M. D.
Do.	Woman's Medical College of Pennsylvania.	Martha Tracy, M. D.
Pittsburgh, Pa.	University of Pittsburgh, School of Medicine.	Raleigh R. Huggins, M. D.
Manila, P. I.	University of the Philippines, College of Medicine and Surgery.	Fernando Calderon, M. D.
Charleston, S. C.	Medical College of the State of South Carolina.	Robert Willson, jr., M. D.
Vermillon, S. Dak.	University of South Dakota, College of Medicine.	Christian P. Lommen, M. D.
Memphis, Tenn.	University of Tennessee, College of Medicine.	James C. McElroy, M. D.
Do.	University of Western Tennessee Medical Department (colored).	M. V. Lynks, M. D.
Nashville, Tenn.	Vanderbilt University, School of Medicine.	L. E. Burch, M. D.
Do.	Meharry Medical College (colored)	John J. Mullowney, M. D.
Dallas, Tex.	Baylor University, Medical Department.	McIver Woody, M. D.
Galveston, Tex.	University of Texas, School of Medicine	William S. Carter, M. D.
Salt Lake City, Utah.	University of Utah, School of Medicine	Perry G. Snow, M. D.
Burlington, Vt.	University of Vermont, College of Medicine.	Henry C. Tinkham, M. D.
Charlottesville, Va.	University of Virginia, Medical Department.	Theodore Hough, Ph. D.
Richmond, Va.	Medical College of Virginia	E. C. L. Miller, M. D.
Morgantown, W. Va.	West Virginia University, School of Medicine.	John N. Simpson, M. D.
Madison, Wis.	University of Wisconsin, Medical School.	Charles R. Bardeen, M. D.
Milwaukee, Wis.	Marquette University, School of Medicine.	Louis F. Jermain, M. D.

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XI.—Presidents or Deans of Schools of Dentistry.

Location.	Name of institution.	President or dean.
Los Angeles, Calif.	University of Southern California, College of Dentistry.	Lewis E. Ford, D. D. S.
San Francisco, Calif.	College of Physicians and Surgeons (Dental Institution).	Charles Boxton, D. D. S.
Do.	University of California, College of Dentistry.	Guy S. Millberry, D. D. S.
Denver, Colo.	Colorado College of Dental Surgery, University of Denver.	Manfred S. Fraser, D. D. S.
Washington, D. C.	Georgetown University, Dental Department.	Bruce Taylor, D. D. S.
Do.	Howard University Dental College (colored).	Andrew J. Brown, D. D. S., vice dean.
Atlanta, Ga.	Atlanta-Southern Dental College.	Thos. P. Hinman, D. D. S.
Chicago, Ill.	Chicago College of Dental Surgery.	Truman W. Brophy, LL. D.
Do.	Northwestern University, Dental School.	Arthur D. Black, D. D. S.
Do.	University of Illinois, College of Dentistry.	Frederick B. Moorehead, M. D.
Indianapolis, Ind.	Indiana Dental College.	Frederic R. Henshaw, D. D. S.
Iowa City, Iowa.	State University of Iowa, College of Dentistry.	Frank T. Breene, D. D. S.
Louisville, Ky.	University of Louisville, College of Dentistry.	Henry B. Tileston, D. D. S.
New Orleans, La.	Loyola School of Dentistry, Loyola University.	C. V. Vignes, D. D. S.
Do.	Tulane University of Louisiana, School of Dentistry.	Wallace Wood, jr., D. D. S.
Baltimore, Md.	Baltimore College of Dental Surgery.	W. G. Foster, D. D. S.
Do.	University of Maryland, Dental Department.	Timothy O. Heatwole, D. D. S.
Boston, Mass.	Harvard University, Dental School.	Eugene Hanes Smith, D. M. D.
Do.	Tufts College, Dental School.	William Rice, D. M. D.
Ann Arbor, Mich.	University of Michigan, College of Dental Surgery.	Marcus L. Ward, D. D. Sc.
Minneapolis, Minn.	University of Minnesota, College of Dentistry.	Alfred Owre, D. M. D.
Kansas City, Mo.	Kansas City-Western Dental College.	Charles C. Allen, D. D. S.
St. Louis, Mo.	St. Louis University, School of Dentistry.	James P. Harper, D. D. S.
Do.	Washington University, School of Dentistry.	John H. Kennerly, D. D. S.
Lincoln, Nebr.	University of Nebraska, College of Dentistry.	Wallace C. Davis, D. D. S.
Omaha, Nebr.	Creighton University, College of Dentistry.	A. Hugh Hipple, D. D. S.
Buffalo, N. Y.	University of Buffalo, College of Dentistry.	Daniel H. Squire, D. D. S.
New York, N. Y.	College of Dental and Oral Surgery of New York.	William Carr, D. D. S.
Do.	Columbia University, Dental School.	James C. Egbert, Ph. D., director
Do.	New York College of Dentistry.	Alfred R. Starr, D. D. S.
Cincinnati, Ohio.	Cincinnati College of Dental Surgery.	G. S. Junkerman, D. D. S.
Do.	Ohio College of Dental Surgery.	Henry T. Smith, D. D. S.
Cleveland, Ohio.	Western Reserve University, Dental School.	Frank M. Casto, D. D. S.
Columbus, Ohio.	Ohio State University, College of Dentistry.	Harry M. Semans, D. D. S.
Portland, Oreg.	North Pacific College of Dentistry.	Herbert C. Miller, D. D. S.
Philadelphia, Pa.	Temple University, School of Dentistry.	I. Norman Broomell, D. D. S.
Do.	Thomas W. Evans Museum and Dental Institute, School of Dentistry, University of Pennsylvania.	Charles R. Turner, M. D.
Pittsburgh, Pa.	University of Pittsburgh, School of Dentistry.	H. Edmund Friesell, D. D. S.
Memphis, Tenn.	College of Dentistry, University of Tennessee.	Joseph A. Gardner.
Nashville, Tenn.	Vanderbilt University, Dental Department.	Boyd Bogle, D. D. S.
Do.	Meharry Dental College (colored).	John J. Mullowney, M. D.
Dallas, Tex.	College of Dentistry, Baylor University.	J. S. Wright, D. D. S.
Houston, Tex.	Texas Dental College.	O. F. Gambati.
Richmond, Va.	School of Dentistry, Medical College of Virginia.	J. A. C. Hoggan, D. D. S.
Milwaukee, Wis.	Marquette University, Dental Department.	Henry L. Banzhaf, D. D. S.

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XII.—Presidents or Deans of Schools of Pharmacy.

Location.	Name of institution.	President or dean.
Auburn, Ala	Alabama Polytechnic Institute, Pharmacy Department.	L. S. Blake, M. S.
Los Angeles, Calif	University of Southern California, College of Pharmacy.	Laird J. Stabler, Sc. D.
San Francisco, Calif	California College of Pharmacy, University of California.	Franklin T. Green, Ph. G.
Boulder, Colo	University of Colorado, College of Pharmacy.	Homer C. Washburn, Ph. C.
Washington, D. C	George Washington University, School of Pharmacy.	Henry E. Kalusowski, Phar. D.
Do	Howard University, Pharmaceutic College (colored).	James H. Purdy, Phar. D., vice dean.
Athens, Ga	University of Georgia, School of Pharmacy.	Robert C. Wilson.
Atlanta, Ga	Atlanta College of Pharmacy	George F. Payne.
Do	Southern College of Pharmacy	R. C. Hood, Phar. D.
Chicago, Ill	University of Illinois, School of Pharmacy.	William B. Day, Phar. G.
Indianapolis, Ind	Indianapolis College of Pharmacy	Fred A. Mueller, Ph. G.
Lafayette, Ind	School of Pharmacy, Purdue University.	Charles B. Jordan, M. S., head of school.
Notre Dame, Ind	University of Notre Dame, School of Pharmacy.	Robert Lee Green, Ph. G.
Valparaiso, Ind	Valparaiso University, Department of Pharmacy.	Hugh Muldoon, Ph. G.
Des Moines, Iowa	Des Moines University, College of Pharmacy.	Elbert O. Kagy, Ph. C.
Iowa City, Iowa	State University of Iowa, College of Pharmacy.	Wilber J. Teeters, Phar. C.
Lawrence, Kans	University of Kansas, School of Pharmacy.	Lucius E. Sayre, M. S.
Louisville, Ky	Louisville College of Pharmacy	Oscar C. Dilly, M. D.
New Orleans, La	New Orleans College of Pharmacy (affiliated with Loyola University).	J. J. Grasser, M. D.
Do	Tulane University of Louisiana, School of Pharmacy.	
Baltimore, Md	Department of Pharmacy, University of Maryland.	E. Frank Kelley, Phar. D.
Boston, Mass	Massachusetts College of Pharmacy	Theodore J. Bradley, Phar. G.
Ann Arbor, Mich	University of Michigan, College of Pharmacy.	Edward Henry Kraus, Ph. D., acting dean.
Big Rapids, Mich	Forris Institute, Pharmacy Department.	M. A. Jones, Ph. C.
Minneapolis, Minn	University of Minnesota, College of Pharmacy.	Frederick J. Wulling, Phm. D.
University, Miss	University of Mississippi, School of Pharmacy.	Henry M. Faser, Ph. G.
Kansas City, Mo	Kansas City College of Pharmacy	David V. Whitney, Ph. C.
St. Louis, Mo	St. Louis College of Pharmacy	Henry M. Whelpley, Phar. M.
Missoula, Mont	State University of Montana, School of Pharmacy.	Charles E. Mollet, Phm. C.
Lincoln, Nebr	University of Nebraska, College of Pharmacy.	Rufus A. Lyman, M. D.
Omaha, Nebr	Creighton University, Department of Pharmacy.	Howard C. Newton, Phm. C.
Newark, N. J	New Jersey College of Pharmacy	William O. Kuebler, president.
Albany, N. Y	Albany College of Pharmacy, Union University.	William Mansfield.
Brooklyn, N. Y	Brooklyn College of Pharmacy	William C. Anderson.
Buffalo, N. Y	Buffalo College of Pharmacy, University of Buffalo.	Willis G. Gregory, M. D.
New York, N. Y	College of Pharmacy of the City of New York, Columbia University.	Henry H. Rusby, M. D.
Do	Fordham University, College of Pharmacy.	Jacob Diner, M. D.
Chapel Hill, N. C	University of North Carolina, School of Pharmacy.	Edward V. Howell, Ph. G.
Agricultural College, N. Dak	North Dakota Agricultural College, School of Pharmacy.	W. F. Sudro, M. S.
Ada, Ohio	Ohio Northern University, College of Pharmacy.	Rudolph H. Raabe, Phar. C.
Cincinnati, Ohio	Cincinnati College of Pharmacy	Walter R. Griess, Phar. D.
Cleveland, Ohio	Western Reserve University, Cleveland School of Pharmacy.	Edward Spease, Ph. C.
Columbus, Ohio	Ohio State University, College of Pharmacy.	Clair A. Dye, Ph. D.
Toledo, Ohio	Toledo University, College of Pharmacy	William McK. Reed, Ph. G.
Norman, Okla	State University of Oklahoma, School of Pharmacy.	David B. R. Johnson.
Corvallis, Oreg	Oregon Agricultural College, School of Pharmacy.	Adolph Zeifle, Ph. C.
Portland, Oreg	North Pacific College of Pharmacy	Frank C. Pearse, Ph. C.
Philadelphia, Pa	Philadelphia College of Pharmacy	Charles H. LaWall, Phar. M.
Do	Temple University, School of Pharmacy.	John R. Minehart, M. D.

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XII.—Presidents or Deans of Schools of Pharmacy—Continued.

Location.	Name of institution.	President or dean.
Pittsburgh, Pa	Pittsburgh College of Pharmacy, University of Pittsburgh.	Julius A. Koch, Sc. D.
Rio Piedras, P. R	University of Porto Rico, College of Pharmacy.	C. W. St. John, A. M.
Providence, R. I	Rhode Island College of Pharmacy and Allied Sciences.	Howard A. Pearce, Phar. D.
Charleston, S. C	Medical College of State of South Carolina, Department of Pharmacy.	Robert Wilson, jr.
Brookings, S. Dak	South Dakota State College of Agriculture and Mechanic Arts, School of Pharmacy.	Earl R. Series.
Memphis, Tenn	School of Pharmacy of the University of Tennessee.	James C. McElroy, M. D.
Nashville, Tenn	Meharry College of Pharmacy (colored)	John J. Mullowney, M. D.
Dallas, Tex	Baylor University, College of Pharmacy	E. H. Cary, M. D.
Galveston, Tex	University of Texas, College of Pharmacy.	William S. Carter, M. D.
Salt Lake City, Utah	University of Utah, Department of Pharmacy.	Le Roy Dey Swingle, Ph. D.
Richmond, Va	School of Pharmacy, Medical College of Virginia.	Wortley F. Rudd, Phar. G.
Pullman, Wash	State College of Washington, School of Pharmacy.	P. H. Dirstine, Phar. G.
Seattle, Wash	University of Washington, College of Pharmacy.	Charles W. Johnson, Ph. D.
Morgantown, W. Va	Department of Pharmacy, West Virginia University.	John N. Simpson.
Madison, Wis	University of Wisconsin course in pharmacy.	Edward Kremers, director.

XIII.—Presidents of Schools of Osteopathy.

Location.	Name of institution.	President.
Los Angeles, Calif	College of Osteopathic Physicians and Surgeons.	L. C. Chandler, D. O.
Chicago, Ill	Chicago College of Osteopathy	J. H. Raymond, D. O.
Des Moines, Iowa	Des Moines Still College of Osteopathy	S. L. Taylor, D. O.
Boston, Mass	Massachusetts College of Osteopathy	J. Oliver Sartwell, D. O.
Kansas City, Mo	Central College of Osteopathy, Kansas City University of Physicians and Surgeons.	A. L. McKenzie, D. O.
Do	Kansas City College of Osteopathy and Surgery.	S. H. Kjerner, D. O.
Kirksville, Mo	American School of Osteopathy	George A. Still, D. O.
Philadelphia, Pa	Philadelphia College of Osteopathy and Osteopathic Hospital.	Arthur J. Flack, D. O.

XIV.—Presidents or Deans of Schools of Veterinary Medicine.

Location.	Name of institution.	President or dean.
Auburn, Ala	Alabama Polytechnic Institute, College of Veterinary Medicine.	C. A. Cary, D. V. M.
Fort Collins, Colo	Colorado Agricultural College, Division of Veterinary Medicine.	George H. Glover.
Washington, D. C	United States College of Veterinary Surgeons.	H. Stanley Gamble, D. V. S.
Chicago, Ill	Chicago Veterinary College	Joseph Hughes.
Indianapolis, Ind	Indiana Veterinary College	Joseph W. Klotz, V. S.
Terre Haute, Ind	Terre Haute Veterinary College	C. I. Fleming.
Ames, Iowa	Iowa State College, Division of Veterinary Medicine.	Charles H. Stange, D. V. M.
Manhattan, Kans	Kansas State Agricultural College, Veterinary Department.	Ralph R. Dykstra, D. V. M.
Grand Rapids, Mich	Grand Rapids Veterinary College	C. S. McGuire.
Columbia, Mo	University of Missouri, Department of Veterinary Science.	Frederick B. Mumford, M. S.
St. Joseph, Mo	St. Joseph Veterinary College	R. C. Moore.
Reno, Nev	University of Nevada, State Veterinary Control Service.	Edward Records, V. M. D., director.
Ithaca, N. Y	New York State Veterinary College at Cornell University.	Veranus A. Moore, V. M. D.

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XIV.—Presidents or Deans of Schools of Veterinary Medicine—Continued.

Location.	Name of institution.	President or dean.
New York, N. Y.	New York State Veterinary College at New York University.	W. Horace Hoskins, D. V. S.
Agricultural College, N. Dak	North Dakota Agricultural College, School of Veterinary Medicine and Surgery.	A. F. Schalk.
Columbus, Ohio	Ohio State University, College of Veterinary Medicine.	David S. White, D. V. M.
Stillwater, Okla.	Oklahoma Agricultural and Mechanical College, School of Veterinary Medicine.	Lowery L. Lewis, D. V. M.
Corvallis, Oreg.	Oregon Agricultural College, Department of Veterinary Medicine.	Bennett T. Simms, D. V. M.
Philadelphia, Pa.	University of Pennsylvania, School of Veterinary Medicine.	Louis A. Klein, V. M. D.
Manila, P. I.	University of the Philippines, College of Veterinary Science.	Alonso S. Shealy, D. V. M.
College Station, Tex.	Agricultural and Mechanical College of Texas.	Mark Francis, D. V. M.
Pullman, Wash.	State College of Washington, College of Veterinary Science.	Earl E. Wegener, D. V. S.

XV.—Presidents, etc., of Institutions for the Training of Teachers.

I. PRESIDENTS OF TEACHERS' COLLEGES.

Teacher-training institutions which offer four years' work above the secondary school and grant degrees.

Location.	Name of institution.	For men, for women, or coeducational.	President.
ARKANSAS.			
Conway	Arkansas State Normal School	Coed	B. W. Torreyson.
CALIFORNIA.			
Chico	State Teachers' College of Chico	Coed	C. M. Osenbaugh.
COLORADO.			
Greeley	State Teachers' College of Colorado.	Coed	John G. Crabbe.
Gunnison	Colorado State Normal School	Coed	Samuel Quigley.
ILLINOIS.			
Carbondale	Southern Illinois State Normal University.	Coed	H. W. Shryock.
Charleston	Eastern Illinois State Teachers' College.	Coed	Livingston C. Lord.
Chicago	National Kindergarten and Elementary College.[1]	Women	Edna Dean Baker.
De Kalb	Northern Illinois State Teachers' College.	Coed	J. Stanley Brown.
Macomb	Western Illinois State Teachers' College.	Coed	W. P. Morgan.
Normal	Illinois State Normal University	Coed	David Felmley.
INDIANA.			
Angola	Tri-State College[1]	Coed	L. M. Sniff.
Danville	Central Normal College[1]	Coed	Jonathan Rigdon.
Indianapolis	Teachers' College of Indianapolis[1]	Women	Eliza A. Blaker.
Terre Haute	The Indiana State Normal School.	Coed	Linnaeus N. Hines.
Muncie	Indiana State Normal School, Eastern Division.	Coed	Do.
IOWA.			
Cedar Falls	Iowa State Teachers' College	Coed	H. H. Seerley.

[1] Private.

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XV.—Presidents, etc., of Institutions for the Training of Teachers—Con.

I. PRESIDENTS OF TEACHERS' COLLEGES—continued.

Location.	Name of institution.	For men, for women, or coeducational.	President.
KANSAS.			
Emporia	Kansas State Normal School	Coed	Thos. W. Butcher.
Hays	Fort Hays Kansas State Normal School.	Coed	W. A. Lewis.
Pittsburg	State Manual Training Normal College.	Coed	W. A. Brandenburg.
LOUISIANA.			
Natchitoches	Louisiana State Normal College	Coed	V. L. Roy.
MASSACHUSETTS.			
Boston	Massachusetts Normal Art School.	Coed	Royal B. Farnum.
Bridgewater	State Normal School	Coed	Arthur C. Boyden.
Framingham	do	Women	James Chalmers.
Salem	do	Coed	J. Asbury Pitman.
Worcester	do	Women	Wm. B. Aspinwall.
MICHIGAN.			
Kalamazoo	Western State Normal School	Coed	D. B. Waldo.
Marquette	Northern State Normal School	Coed	James H. Kaye.
Mount Pleasant	Central State Normal School	Coed	E. C. Warriner.
Ypsilanti	Michigan State Normal College	Coed	Charles McKenny.
MINNESOTA.			
Bemidji	State Teachers' College	Coed	M. W. Deputy.
Duluth	do	Coed	E. W. Bohannon.
Mankato	do	Coed	C. H. Cooper.
Moorhead	do	Coed	O. M. Dickerson.
St. Cloud	do	Coed	J. C. Brown.
Winona	do	Coed	Guy E. Maxwell.
MISSOURI.			
Cape Girardeau	Southeast Missouri State Teachers' College.	Coed	Jos. A. Serena.
Jefferson City	Lincoln University [1]	Coed	C. Richardson.
Kirksville	Northeast Missouri State Teachers' College.	Coed	John R. Kirk.
Maryville	Northwest Missouri State Teachers' College.	Coed	Uel W. Lamkin.
Springfield	Southwest Missouri State Teachers' College.	Coed	Clyde M. Hill.
Warrensburg	Central Missouri State Teachers' College.	Coed	E. L. Hendricks.
NEBRASKA.			
Chadron	State Normal School and Teachers' College.	Coed	Robert I. Elliott.
Kearney	do	Coed	Geo. E. Martin.
Peru	do	Coed	A. L. Caviness.
Wayne	do	Coed	U. S. Conn.
NEW MEXICO.			
East Las Vegas	New Mexico Normal University	Coed	Jonathan H. Wagner.
Silver City	New Mexico State Normal School.	Coed	James F. Chamberlain.
NEW YORK.			
Albany	New York State College for Teachers.	Coed	A. R. Brubacher.
NORTH DAKOTA.			
Bottineau	Forestry State Normal School	Coed	Vernon L. Mangun.
Dickinson	State Normal School	Coed	Samuel T. May.
Ellendale	State Normal and Industrial School.	Coed	R. M. Black.
Mayville	State Normal School	Coed	John O. Evjen.
Minot	do	Coed	L. H. Buler.
Valley City	State Teachers' College	Coed	C. E. Allen.

[1] For colored persons.

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XV.—PRESIDENTS, ETC., OF INSTITUTIONS FOR THE TRAINING OF TEACHERS—Con.

I. PRESIDENTS OF TEACHERS' COLLEGES—continued.

Location.	Name of institution.	For men, for women, or coeducational.	President.
OHIO.			
Bowling Green	State Normal College	Coed	H. B. Williams.
Kent	....do	Coed	J. E. McGilvrey.
OKLAHOMA.			
Ada	East Central State Teachers' College.	Coed	A. Linscheid.
Alva	Northwestern Normal College	Coed	J. P. Battenberg.
Durant	Southeastern State Normal School.	Coed	H. G. Bennett.
Edmond	Central State Teachers' College	Coed	John G. Mitchell.
Langston	Colored Agricultural and Normal University.[2]	Coed	J. M. Marquess.
Tahlequah	Northeastern State Normal School.	Coed	W. T. Ford.
Weatherford	Southwestern State Teachers' College.	Coed	A. H. Burris.
RHODE ISLAND.			
Providence	Rhode Island College of Education.	Coed	John L. Alger.
SOUTH CAROLINA.			
Orangeburg	State Agricultural and Mechanical College.[2]	Coed	R. S. Wilkinson.
SOUTH DAKOTA.			
Aberdeen	Northern Normal and Industrial School.	Coed	Harold W. Foght.
TENNESSEE.			
Nashville	George Peabody College for Teachers.[1]	Coed	Bruce Ryburn Payne.
TEXAS.			
Alpine	Sul Ross State Normal College	Coed	R. L. Marquis.
Canyon	West Texas State Normal College.	Coed	Joseph Abner Hill.
Commerce	East Texas State Normal College.	Coed	R. B. Binnion.
Denton	North Texas State Normal College.	Coed	W. H. Bruce.
Huntsville	Sam Houston Normal Institute	Coed	H. F. Estill.
Prairie View	Prairie View State Normal and Industrial College.[2]	Coed	J. G. Osborne.
San Marcos	Southwest Texas State Normal College.	Coed	C. E. Evans.
VIRGINIA.			
East Radford	State Normal School for Women.	Women	John Preston McConnell.
Farmville	....do	Women	Jos. L. Jarman.
Fredericksburg	....do	Women	A. B. Chandler, jr.
Harrisonburg	....do	Women	Samuel P. Duke.
WEST VIRGINIA.			
Huntington	Marshall College	Coed	F. R. Hamilton.
Institute	West Virginia Collegiate Institute[2]	Coed	John W. Davis.
WISCONSIN.			
Menomonie	The Stout Institute	Coed	L. D. Harvey.

[1] Private.

[2] For colored persons.

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XV.—Presidents, etc., of Institutions for the Training of Teachers—Con.

II. PRINCIPALS OF NORMAL TRAINING SCHOOLS.

1. *Public Normal Schools.*

Location.	Name of institution.	For men, for women, or coeducational.	Principal.
ALABAMA.			
Carrollton	Pickens County Training School [1]	Coed	A. R. Spencer.
Centerville	Bibb County Training School [1]	Coed	H. D. Davidson.
Cottage Grove	Coosa County Training School [1]	Coed	J. T. Trail.
Daphne	Baldwin County Training School [1]	Coed	Ligon A. Wilson.
Do	State Normal School	Coed	Hilary H. Holmes.
Florence	do	Coed	Henry J. Willingham.
Hayneville	Lowndes County Training School [1]	Coed	C. P. Everett.
Jacksonville	State Normal School	Coed	C. W. Daugette.
Livingston	do	Coed	G. W. Broek.
Montgomery	do [1]	Coed	G. W. Trenholm.
Normal	State Agricultural & Mechanical Institute.	Coed	T. R. Parker, acting.
Plateau	Mobile County Training School [1]	Coed	Isaiah J. Whitley.
Troy	State Normal School	Coed	E. M. Shackelford.
ARIZONA.			
Flagstaff	Northern Arizona Normal School	Coed	Lynn B. McMullen.
Tempe	Arizona Normal School	Coed	Arthur J. Matthews.
ARKANSAS.			
Edmondson	Crittenden County Training School.[1]	Coed	B. J. Reed.
Fordyce	Dallas County Training School [1]	Coed	S. J. Anderson.
Hope	Hempstead County Training School.[1]	Coed	H. C. Yerger.
Marianna	Lee County Training School [1]	Coed	D. W. Hughes.
Pine Bluff	Branch Normal College [1]	Coed	C. W. Smith.
CALIFORNIA.			
Arcata	Humboldt State Teachers' College.	Coed	N. B. Van Matre.
Fresno	State Teachers' College of Fresno.	Coed	C. L. McLane.
San Diego	State Teachers' College of San Diego.	Coed	Edward L. Hardy.
San Francisco	State Teachers' College of San Francisco.	Coed	Frederic Burk.
San Jose	State Teachers' College of San Jose.	Coed	Wm. W. Kemp.
Santa Barbara	State Teachers' College	Coed	Clarence S. Phelps.
CONNECTICUT.			
Bridgeport	City Normal School	Women	Le Roy Weller.
Danbury	State Normal Training School	Coed	J. R. Perkins.
New Britain	Normal School	Coed	Marcus White.
New Haven	State Normal Training School	Women	Arthur B. Morrill.
Willimantic	do	Coed	George H. Shafer.
DISTRICT OF COLUMBIA.			
Washington	J. Ormond Wilson Normal School.	Coed	Anne M. Goding.
Do	Miner Normal School	Coed	Eugene A. Clark.
GEORGIA.			
Athens	State Normal School	Coed	J. M. Pound.
Atlanta	Normal Training School	Women	Emma Wesley.
Milledgeville	Georgia Normal and Industrial College.	Women	M. M. Parks.
Sandersville	Washington County Training School.[1]	Coed	T. J. Elder.
Valdosta	South Georgia State Normal College.	Women	R. H. Powell.
HAWAII.			
Honolulu	Territorial Normal School	Coed	Benj. O. Wist.
IDAHO.			
Albion	State Normal School	Coed	C. E. Bocock.
Lewiston	do	Coed	Oliver M. Elliott.

[1] For colored persons.

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XV.—Presidents, etc., of Institutions for the Training of Teachers—Con.

II. Principals of Normal Training Schools—continued.

1. Public Normal Schools—Continued.

Location.	Name of institution.	For men, for women, or coeducational.	Principal.
ILLINOIS.			
Chicago	Chicago Normal College	Coed	Wm. B. Owen.
INDIANA.			
Fort Wayne	Fort Wayne Normal School	Coed	Flora Wilber.
Indianapolis	Indianapolis Normal Training School.	Women	Marion Lee Webster.
IOWA.			
Sioux City	Sioux City Normal School	Women	Amelia H. Rhynsburger.
KENTUCKY.			
Bowling Green	Western Kentucky State Normal School.	Coed	H. H. Cherry.
Frankfort	Kentucky Normal and Industrial Institute.[1]	Coed	G. P. Russell.
Louisville	Louisville Normal School	Women	Elizabeth Breckinridge.
Paris	Bourbon County Training School[1]	Coed	W. J. Collery.
Richmond	Eastern Kentucky State Normal School.	Coed	T. J. Coates.
LOUISIANA.			
Bastrop	Morehouse County Training School.[1]	Coed	R. G. Steptoe.
Converse	Sabine County Training School[1]	Coed	W. B. Purvis.
Franklinton	Washington County Training School.[1]	Coed	B. P. Smith.
Grambling	Lincoln County Training School[1]	Coed	Chas. P. Adams.
New Orleans	New Orleans Normal and Training School.	Coed	Mrs. Margaret C. Hanson.
MAINE.			
Castine	Eastern State Normal School	Coed	William D. Hall.
Farmington	State Normal School	Coed	Wilbert G. Mallett.
Gorham	Western State Normal School	Coed	W. E. Russell.
Lewiston	Dingley Normal Training School	Women	Adelaide V. Finch.
Machias	Washington State Normal School	Coed	Wm. L. Powers.
Presque Isle	Aroostook State Normal School	Coed	S. L. Merriman.
MARYLAND.			
Baltimore	Baltimore Teachers' Training School.	Coed	Norman W. Cameron.
Do	do.[1]	Coed	Joseph H. Lockerman.
Bowie	Maryland State Normal and Industrial School.[1]	Coed	L. S. James.
Frostburg	State Normal School	Coed	James Widdowson.
Towson	Maryland State Normal School	Coed	Lida Lee Tall.
MASSACHUSETTS.			
Boston	Boston Normal School	Women	Wallace C. Boyden.
Fitchburg	State Normal School	Coed	Wm. D. Parkinson, acting.
Hyannis	do	Coed	Wm. A. Baldwin.
Lowell	do	Women	Clarence M. Weed.
North Adams	do	Women	Roy Leon Smith.
Westfield	do	Women	Clarence A. Brodeur.
MICHIGAN.			
Allegan	County Normal School	Coed	Stella Higgins.
Berrien Springs	do	Coed	Jennie L. Burton.
Big Rapids	Mecosta County Normal School	Coed	Edith A. Collins.
Blissfield	Lenawee County Normal School	Coed	Trixie Lamb.
Cadillac	Wexford County Normal School	Coed	Nora Owens.
Caro	Tuscola County Normal School	Coed	Lucile Hutchinson.
Charlevoix	Charlevoix County Normal School	Coed	Lois Bowman.
Charlotte	Eaton County Normal School	Coed	Mrs. Ada Carrick.
Cheboygan	Cheboygan County Normal School	Coed	Lillian Morris.
Chesaning	Saginaw County Normal School	Coed	Martha Knight.
Detroit	Detroit Teachers' College	Coed	S. A. Courtis, dean.

[1] For colored persons.

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XV.—Presidents, etc., of Institutions for the Training of Teachers—Con.

II. PRINCIPALS OF NORMAL TRAINING SCHOOLS—continued.

1. *Public Normal Schools*—Continued.

Location.	Name of institution.	For men, for women, or coeducational.	Principal.
MICHIGAN—continued.			
Dowagiac	Cass County Normal School	Coed	Frances L. Burns.
East Tawas	Iosco County Normal Training School.	Coed	Mrs. J. K. Osgerby.
Evart	Osceola County Normal School	Coed	Pearl C. Bigge.
Flint	Genese County Normal School	Coed	Bess B. Penoyer.
Frankfort	Benzie County Normal School	Coed	Beryl Haynes.
Gladwin	Gladwin County Normal School	Coed	Alberta Alkin.
Hastings	Barry County Normal School	Coed	Mrs. Mabel T. Clark.
Ionia	Ionia County Normal School	Coed	Effie Caskey.
Kalkaska	County Normal School	Coed	Alice V. Caldwell.
Lake City	Missaukee County Normal School	Coed	Mildred L. Dunning.
Lapeer	Lapeer County Normal School	Coed	Emma Loughname.
Ludington	Mason County Normal School	Coed	A. E. Field.
Mancelona	Antrim County Normal School	Coed	Forence Pitcher.
Manistee	Manistee County Normal School	Coed	Benj. Klager, superintendent.
Marshall	Calhoun County Normal School	Coed	Wilma Davis.
Mason	County Normal School	Coed	Marion Blount.
Onaway	Presque Isle County Normal School.	Coed	Amanda Hebeler.
Ontonagon	Ontonagon County Normal School.	Coed	Mary Black.
Petoskey	Emmet County Normal School	Coed	Maud Ball.
St. Johns	Clinton County Normal School	Coed	Martha McArthur.
Standish	Arenac County Normal School	Coed	Emma Connor.
Stanton	Montcalm County Normal School	Coed	Ina McNeal.
Traverse City	Grand Traverse County Normal School.	Coed	Anna L. Evans.
West Branch	Ogemaw County Normal School	Coed	Lillian M. Greer.
MISSISSIPPI.			
Hattiesburg	Mississippi Normal College	Coed	Joe Cook.
Purvis	Lamar County Training School [1]	Coed	J. J. Jefferson.
Tupelo	Lee County Training School [1]	Coed	A. M. Strange.
MISSOURI.			
St. Louis	Harris Teachers' College	Coed	E. George Payne.
MONTANA.			
Dillon	Montana State Normal College	Coed	Sheldon E. Davis.
NEW HAMPSHIRE.			
Concord	Dewey Training School	Women	Addie F. Straw.
Keene	State Normal School	Coed	Wallace E. Mason.
Plymouth	....do	Coed	Ernest L. Silver.
Portsmouth	Portsmouth Training School	Women	Alice Mildram.
NEW JERSEY.			
Jersey City	Training School for Teachers	Coed	J. H. Brensinger.
Montclair	State Normal School	Coed	Charles S. Chapin.
Newark	....do	Coed	W. S. Willis.
Paterson	City Normal Training School	Coed	Frank Webster Smith.
Trenton	State Normal School	Coed	J. J. Savitz.
NEW MEXICO.			
El Rito	Spanish-American Normal School.	Coed	Filadelfo Baca.
NEW YORK.			
Brockport	State Normal School	Coed	Alfred C. Thompson.
Brooklyn	Maxwell Training School for Teachers.	Coed	Emma L. Johnston.
Buffalo	State Normal School	Coed	Harry W. Rockwell.
Cortland	State Normal and Training School.	Coed	H. De W. De Groat.
Fredonia	State Normal School	Coed	Myron T. Dana.
Geneseo	State Normal School	Coed	James V. Sturges.

[1] For colored persons.

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XV.—PRESIDENTS, ETC., OF INSTITUTIONS FOR THE TRAINING OF TEACHERS—Con.

II. PRINCIPALS OF NORMAL TRAINING SCHOOLS—continued.

1. *Public Normal Schools*—Continued.

Location.	Name of institution.	For men, for women, or coeducational.	Principal.
NEW YORK—contd.			
Jamaica	Training School for Teachers	Coed	A. C. McLachlan.
New Paltz	State Normal School	Coed	John C. Bliss.
New York	New York Training School for Teachers.	Coed	Hugo Newman.
Oneonta	State Normal School	Coed	P. I. Bugbee.
Oswego	....do	Coed	James G. Riggs.
Plattsburgh	....do	Coed	Geo. K. Hawkins.
Potsdam	....do	Coed	R. T. Congdon.
Rochester	City Normal School	Coed	Edward J. Bonner.
Schenectady	Schenectady Teachers' Training School.	Coed	G. B. Jeffers.
Syracuse	Syracuse Training School for Teachers.	Women	J. Edward Banta.
Watertown	Watertown Training School	Coed	Ella Marie Walradt.
NORTH CAROLINA.			
Bayboro	Pamlico County Training School [1]	Coed	R. L. Rice.
Boone	Appalachian Training School	Coed	B. B. Dougherty.
Clinton	Sampson County Training School [1]	Coed	Z. H. Hyman.
Cullowhee	Cullowhee Normal and Industrial School.	Coed	Robert L. Madison.
Elizabeth City	State Normal School [1]	Coed	P. W. Moore.
Fayetteville	....do. [1]	Coed	E. E. Smith.
Greenville	East Carolina Teachers' Training School.	Women	Robert H. Wright.
Grimesland	Pitt County Training School [1]	Coed	G. R. Whitfield.
Method	Berry O'Kelly Training School [1]	Coed	J. H. Bias.
Parmele	Martin County Training School [1]	Coed	W. C. Chance.
Powellsville	Bertie County Training School [1]	Coed	C. G. White.
Rocky Point	Pender County Training School [1]	Coed	T. T. Ringer.
Shelby	Cleveland County Training School. [1]	Coed	A. W. Foster.
Smithfield	Johnston County Training School [1]	Coed	Wm. M. Cooper.
Southport	Brunswick County Training School. [1]	Coed	Jno. H. Floyd.
Sunbury	Gates County Training School [1]	Coed	T. S. Cooper.
Wadesboro	Anson County Training School [1]	Coed	J. R. Faison.
Winston-Salem	The Slater State Normal School [1]	Coed	S. G. Atkins.
OHIO.			
Anna	Shelby County Normal School	Coed	Mabel Dillahunt.
Ansonia	Darke County Normal School	Coed	Anna Todd.
Batavia	Clermont County Normal School	Coed	Susanne M. Kochler.
Berlin Heights	Erie County Normal School	Coed	Ruth Brintnall.
Canal Winchester	Franklin County Normal School	Coed	Dora A. States.
Canfield	Mahoning County Normal School.	Coed	Eliza M. Allison.
Chardon	County Normal School	Coed	Mrs. Katherine Wren.
Chillicothe	Ross County Normal School	Coed	Pearl Geeting.
Circleville	Pickaway County Normal School.	Coed	Laura Mengert.
Cleveland	Cleveland School of Education	Women	Ambrose L. Suhrie, dean.
Columbus	Columbus Normal School	Women	W. T. Heilman, acting.
Dayton	Dayton Normal School	Women	Grace A. Greene.
Dresden	Muskingum County Normal School.	Coed	Gertrude Bartlett.
Edison	Morrow County Normal School	Coed	Margaret E. Tipton.
Hebron	Licking County Normal School	Coed	Bettie M. Tracy.
Kingsville	Ashtabula County Normal School.	Coed	Jessie L. Hickok.
Lancaster	Fairfield County Normal School	Coed	Eva Richardson.
Lima	City Normal School	Coed	Ilo Maddux.
Lisbon	Columbiana County Normal School.	Coed	Fronia Isley.
Minerva	Minerva County Normal School	Coed	L. Ethel Spray.
Monroeville	Huron County Normal School	Coed	Bertha A. Lively.
New Lexington	Perry County Normal School	Coed	Margaret Nesbitt.
New Philadelphia	Tuscarawas County Normal School.	Coed	Maude A. Bond.
New Vienna	Clinton-Highland County Normal School.	Coed	Mary B. Hoskins.
Oak Harbor	Ottawa County Normal School	Coed	Elizabeth J. Offerman.

[1] For colored persons.

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XV.—Presidents, etc., of Institutions for the Training of Teachers—Con.

II. Principals of Normal Training Schools—continued.

1. Public Normal Schools—Continued.

Location.	Name of institution.	For men, for women, or coeducational.	Principal.
OHIO—continued.			
Ottawa	Putnam County Normal School	Coed	Ruth C. Frey.
Richwood	Union County Normal School	Coed	Daisy Irene Herrold.
Scio	Harrison County Normal School	Coed	Elizabeth W. Chandler.
Toledo	Toledo Teacher Training School	Women	Elbert E. Day.
Wapakoneta	Auglaize County Normal School	Coed	Olive M. Eggleston.
West Jefferson	Madison County Normal School	Coed	Kathleen Zitt.
West Lafayette	Coshocton County Normal School	Coed	Winnifred C. Jones.
West Liberty	Logan County Normal School	Coed	H. W. Holycross.
West Milton	Miami County Normal School	Coed	Helen Bradley.
Wheelersburg	Scioto County Normal School	Coed	Abigail Bristow.
Zanesville	City Normal School	Coed	F. E. Swingle.
OREGON.			
Monmouth	State Normal School	Coed	J. L. Landers.
PENNSYLVANIA.			
Bloomsburg	State Normal School	Coed	C. H. Fisher.
California	Southwestern State Normal School	Coed	John A. Entz.
Cheyney	Cheyney State Normal School [1]	Coed	Leslie Pinckney Hill.
Clarion	State Normal School	Coed	Clyde C. Green.
East Stroudsburg	....do	Coed	Frank E. Baker.
Edinboro	....do	Coed	A. G. Crane.
Indiana	State Normal School	Coed	John A. H Keith.
Kutztown	Keystone State Normal School	Coed	A. C. Rothermel.
Lock Haven	Central State Normal School	Coed	Warren Nevin Drum.
Mansfield	State Normal School	Coed	William R. Straughn.
Millersville	....do	Coed	C. H. Gordinier.
Philadelphia	Philadelphia Normal School	Coed	J. Eugene Baker.
Pittsburgh	Training School for Teachers	Women	H. B. Davis.
Shippensburg	Cumberland Valley State Normal School.	Coed	Ezra Lehman.
Slippery Rock	State Normal School	Coed	J. Linwood Eisenberg.
West Chester	....do	Coed	Andrew Thomas Smith.
SOUTH CAROLINA.			
Marion	Marion County Training School [1]	Coed	John P. Burgess.
Summerville	Dorchester County Training School.[1]	Coed	Mrs. Grace M. Ashe.
SOUTH DAKOTA.			
Madison	Eastern State Normal School	Coed	E. C. Higbie.
Spearfish	State Normal School	Coed	E. C. Woodburn.
Springfield	Southern State Normal School	Coed	C. G. Lawrence.
TENNESSEE.			
Denmark	Madison County Training School [1]	Coed	H. L. L. Moss.
Johnson City	East Tennessee State Normal School.	Coed	Sidney G. Gilbreath.
Lebanon	Wilson County Training School [1]	Coed	J. R. McDaniel
Lucy	Shelby County Training School [1]	Coed	T. J. Johnson.
Murfreesboro	Middle Tennessee State Normal School.	Coed	R. L. Jones.
Nashville	State Agricultural and Industrial Normal School.[1]	Coed	W. J. Hale.
Normal (Memphis)	West Tennessee State Normal School.	Coed	Andrew A. Kincannon.
TEXAS.			
Hallettsville	Lavaca County Training School [1]	Coed	P. S. Stevens.
VERMONT.			
Castleton	State Teachers' Normal School	Coed	Caroline S. Woodruff.

[1] For colored persons.

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XV.—Presidents, etc., of Institutions for the Training of Teachers—Con.

II. Principals of Normal Training Schools—Continued.

1. Public Normal Schools—Continued.

Location.	Name of institution.	For men, for women, or coeducational.	Principal.
VIRGINIA.			
Blackstone	Nottoway County Training School.[1]	Coed	J. M. Botts.
Charlottesville	Albemarle County Training School.[1]	Coed	J. G. Shelton.
North Emporia	Greensville County Training School.[1]	Coed	J. H. Wallen.
Petersburg	Virginia Normal and Industrial Institute.[1]	Coed	John Manuel Gandy.
Richmond	City Normal Training School	Women	W. D. Ellis.
Ruthville	Charles City County Training School.[1]	Coed	H. E. Logan.
Syringa	Middlesex County Training School.[1]	Coed	J. Henry St. Clare Walker.
Waverly	Sussex County Training School [1]	Coed	Wm. E. Knox.
Yorktown	York County Training School [1]	Coed	Chas. E. Brown.
WASHINGTON.			
Bellingham	State Normal School	Coed	
Centralia	....do	Coed	Alexander C. Roberts.
Cheney	....do	Coed	N. D. Showalter.
Ellensburg	Washington State Normal School	Coed	George H. Black.
WEST VIRGINIA.			
Athens	Concord State Normal School	Coed	C. C. Rossey.
Bluefield	Bluefield Colored Institute [1]	Coed	R. P. Sims.
Fairmont	State Normal School	Coed	Joseph Rosier.
Glenville	....do	Coed	E. G. Rohrbough.
Shepherdstown	Shepherd College, State Normal School.	Coed	W. H. S. White.
West Liberty	State Normal School	Coed	Howard J. McGinnis.
WISCONSIN.			
Algoma	Door-Kewaunee County Training School.	Coed	E. J. Young.
Alma	Buffalo County Training School for Teachers.	Coed	Rose K. Brandt.
Antigo	Langlade County Training School	Coed	J. H. Lasher.
Ashland	Ashland County Training School	Coed	J. M. Lorscheter.
Berlin	Green Lake County Training School.	Coed	J. F. Cavanaugh.
Columbus	Columbia County Training School	Coed	M. C. Palmer.
Eau Claire	Eau Claire County Training School	Coed	F. E. Jaastad.
Do	State Normal School	Coed	H. A. Schofield.
Janesville	Rock County Training School for Teachers.	Coed	F. J. Lowth.
Kaukauna	Outagamie County Training School	Coed	W. P. Hagman.
La Crosse	State Normal School	Coed	Fassett A. Cotton.
Ladysmith	Rusk County Training School	Coed	B. M. Dresden.
Manitowoc	Manitowoc County Teachers' Training School.	Coed	Fred Christiansen.
Marinette	Stephenson Training School	Coed	W. E. Morton, superintendent.
Medford	Taylor County Training School	Coed	J. H. Wheelock.
Menomonie	Dunn County Training School for Teachers.	Coed	G. L. Bowman.
Merrill	Lincoln County Training School for Teachers.	Coed	E. W. McCrary.
Milwaukee	State Normal School	Coed	Carroll G. Pearse.
Monroe	Green County Training School	Coed	C. H. Dietz.
New Lisbon	Juneau County Teachers' Training School.	Coed	C. W. McNown.
New London	Waupaca County Training School for Teachers.	Coed	Ellis N. Calef.
Oshkosh	State Normal School	Coed	H. A. Brown.
Phillips	Price County Training School	Coed	William Milne.
Platteville	State Normal School	Coed	Asa M. Royce.
Reedsburg	Sauk County Training School	Coed	Ellen B. McDonald.
Rhinelander	Oneida County Training School	Coed	M. V. Boyce.

[1] For colored persons.

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XV.—Presidents, etc., of Institutions for the Training of Teachers—Con.

II. PRINCIPALS OF NORMAL TRAINING SCHOOLS—continued.

1. Public Normal Schools—Continued.

Location.	Name of institution.	for men, for women, or coeducational.	Principal.
WISCONSIN—contd.			
Rice Lake	Barron County Training School for Teachers.	Coed	L. P. Bunker.
Richland Center	Richland County Training School.	Coed	L. C. Johnson.
River Falls	State Normal School	Coed	J. H. Ames.
St. Croix Falls	Polk County Training School.	Coed	C. L. Hill.
Stevens Point	State Normal School	Coed	John F. Sims.
Superior	....do....	Coed	V. E. McCaskill.
Union Grove	Racine-Kenosha Joint County Training School for Teachers.	Coed	Arthur J. Smith.
Viroqua	Vernon County Normal Training School.	Coed	A. W. Zellmer.
Wausau	Marathon County Training School	Coed	D. A. Swartz.
Wautoma	Waushara County Training School	Coed	E. J. Fitzpatrick.
Whitewater	State Normal School	Coed	F. S. Hyer.
Wisconsin Rapids	Wood County Teachers' Training School.	Coed	M. H. Jackson.

2. Private Normal Schools.

Tuskegee, Ala	Tuskegee Normal and Industrial Institute.[1]	Coed	Robert R. Moton.
Denver, Colo	Denver Normal and Preparatory School.	Coed	M. F. Miller.
New Haven, Conn	New Haven Normal School of Gymnastics.	Coed	E. Hermann Arnold.
Rexburg, Idaho	Ricks Normal College	Coed	Geo. S. Romney.
Chicago, Ill	American College of Physical Education.	Coed	M. A. Wood.
Do	Chicago Normal School of Physical Education.	Women	Frances Musselman.
Do	Columbia Normal School of Physical Education.	Women	Mary A. Blood.
Oak Park, Ill	Concordia Teachers' College	Men	W. C. Kohn.
Indianapolis, Ind	Normal College of the American Gymnastic Union.	Coed	Emil Rath.
Waverly, Iowa	Wartburg Normal College	Coed	Aug. Engelbrecht.
Lexington, Ky	Chandler Normal School[1]	Coed	Frederic J. Werking.
Louisa, Ky	Kentucky Normal College	Coed	Walter M. Byington.
Ammendale, Md	Ammendale Normal Institute	Men	Brother Philip.
Boston, Mass	Boston School of Physical Education.	Women	M. Sanderson.
Do	Posse Normal School of Gymnastics.	Women	Hartvig Nissen.
Do	Sloyd Training School for Teachers	Coed	Josif Sandberg.
Cambridge, Mass	Sargent School for Physical Education.	Women	Dudley A. Sargent.
Battle Creek, Mich	Normal School of Physical Education.	Women	Linda M. Roth.
Madison, Minn	Lutheran Normal School	Coed	E. R. Rorem.
New Ulm, Minn	Dr. Martin Luther College	Coed	E. R. Bliefernicht.
Seward, Nebr	The Lutheran Seminary	Coed	F. W. C. Jesse.
Newark, N. J	Newark Normal School of Physical Education and Hygiene.	Coed	Henry Panzer.
New York, N. Y	Chalif Russian Normal School of Dancing.	Coed	Louis H. Chalif.
Do	Savage School for Physical Education.	Coed	Watson L. Savage.
Raleigh, N. C	St. Augustine's School[1]	Coed	Rev. E. H. Goold.
Maria Stein, Ohio	Normal School of the Precious Blood.	Women	Sister M. Angeline.
New Lexington, Ohio	St. Aloysius Academy Normal School.	Women	Mother M. Leonie.
Urbana, Ohio	Curry Normal and Industrial Institute.[1]	Coed	E. W. B. Curry.
Mount Angel, Oreg	Mount Angel Normal School	Women	S. M. Rose.
Oswego, Oreg	Marylhurst Normal School	Women	Mother Alphonsus Mary.
Philadelphia, Pa	Gratz College	Coed	Rev. Henry M. Speaker.

[1] For colored persons.

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XV.—PRESIDENTS, ETC., OF INSTITUTIONS FOR THE TRAINING OF TEACHERS—Con.

II. PRINCIPALS OF NORMAL TRAINING SCHOOLS—continued.

2. Private Normal Schools—Continued.

Location.	Name of institution.	For men, for women, or coeducational.	Principal.
Charleston, S. C.	Avery Normal Institute[1]	Coed	B. F. Cox.
Do	Wallingford Academy	Coed	W. T. Frasier.
Sioux Falls, S. Dak.	Augustana College and Normal School.	Coed	Rev. C. O. Solberg.
Martin, Tenn.	Hall-Moody Normal School	Coed	James T. Warren.
Memphis, Tenn.	Le Moyne Normal Institute[1]	Coed	J. A. Smith (Miss).
Morristown, Tenn.	Morristown Normal and Industrial College.[1]	Coed	Judson S. Hill.
St. George, Utah	Dixie Normal College	Coed	Joseph K. Nicholes.
Hampton, Va.	Hampton Normal and Agricultural Institute.[1]	Coed	James E. Gregg.
Seattle, Wash.	Holy Name Normal School	Women	Sister M. Dolorosa.
Spokane, Wash.	Holy Name Academy and Normal School.	Women	Sister Mary Francis Xavier.
Harpers Ferry, W. Va.	Storer College[1]	Coed	Henry T. McDonald.
St. Francis, Wis.	Pio Nono College	Men	Rev. Jos. J. Pierron.

[1] For colored persons.

III. DIRECTORS OF KINDERGARTEN TRAINING IN COLLEGES, NORMAL SCHOOLS, AND IN KINDERGARTEN TRAINING SCHOOLS.

Location.	Name of institution.	Director of kindergarten training.
ALABAMA.		
Tuskegee	Tuskegee Normal and Industrial Institute (colored).	Mrs. G. K. Logan.
ARIZONA.		
Tempe	Tempe Normal School of Arizona	Amanda Zeller.
CALIFORNIA.		
Berkeley	Barnard Kindergarten Training School	Grace Everett Barnard.
Chico	State Normal School	Marion Barbour.
Fresno	do	
Los Angeles	Southern Branch University of California	Ethel B. Waring.
Do	Miss Fulmer's School	Grace Fulmer.
Pasadena	Broadoaks Kindergarten Training School	Ada Mae Brooks.
San Francisco	State Normal School	Anna Stovall.
San Jose	do	Isabel O. MacKenzie.
COLORADO.		
Greeley	State Normal College	Genevieve Lyford.
Gunnison	Colorado State Normal School	Stella H. Yowell.
CONNECTICUT.		
Bridgeport	Bridgeport City Normal School	Eileen Stowell.
Do	The Fannie A. Smith Kindergarten Training School.	Fannie A. Smith.
Do	Connecticut Froebel Normal School	Mary C. Mills.
Hartford	Culver-Smith Kindergarten Training School	M. Lima Culver and Louise Smith.
New Britain	State Normal School	May Heath Noyes.
DISTRICT OF COLUMBIA.		
Washington	Columbia Kindergarten Training School	Sarah K. Lippincott.
Do	J. Ormond Wilson Normal School	Jane M. McKnew.
Do	Myrtilla Miner Normal School (colored)	Irma A. Craig.
FLORIDA.		
Miami	Miami Kindergarten Normal School	Kate Colyer.
Tallahassee	State College for Women	Mabel H. Wheeler.

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XV.—PRESIDENTS, ETC., OF INSTITUTIONS FOR THE TRAINING OF TEACHERS—Con.

III. DIRECTORS OF KINDERGARTEN TRAINING IN COLLEGES, NORMAL SCHOOLS, AND IN KINDERGARTEN TRAINING SCHOOLS—continued.

Location.	Name of institution.	Director of kindergarten training.
OHIO.		
Akron	Perkins Normal School	Helen Evans.
Athens	Ohio University	Constance T. McLeod.
Cincinnati	Cincinnati Association Kindergarten Training School.	Lillian H. Stone.
Do	Cincinnati Missionary Training School	Lottie N. Sinnett.
Cleveland	Cleveland Kindergarten Training School	Netta Faris.
Do	Cleveland Normal School	Grace L. Brown.
Columbus	Columbus Normal School	Elizabeth Samuel.
Dayton	Dayton Normal School	Anna Littell.
Kent	State Normal School	John E. McGilvery.
Oberlin	Oberlin Kindergarten Training School	Clara May.
Toledo	Law Froebel Kindergarten Training School.	Mary E. Law.
OKLAHOMA.		
Ada	East Central State Teachers' College	Anna Paxton.
Oklahoma City	Oklahoma City College	Mary E. Harris.
PENNSYLVANIA.		
Clarion	State Normal School	Lydia Millinger.
East Stroudsburg	....do	Gertrude M. Rogers.
Harrisburg	Froebel Kindergarten Training School	Evelyn Barrington.
Jenkintown	Beechwood School	Eula Ableson.
Kutztown	State Normal School	
Lock Haven	Central State Normal School	Helen B. Lesher.
Mansfield	State Normal School	Edna Bond.
Millersville	....do	Annie Gochnauer.
Philadelphia	Philadelphia Normal School	Mary Adair.
Do	Temple University	Lucinda P. MacKenzie.
Do	Training School for Kindergartners	Adelaide T. Illman.
Pittsburgh	Training School for Teachers, Colfax School No. 1.	H. B. Davis.
Do	School of Childhood, University of Pittsburgh.	
Shippensburg	Cumberland Valley State Normal School	Mary Rachel Harris.
Slippery Rock	State Normal School	Mrs. George Hamm.
Westchester	....do	
RHODE ISLAND.		
Providence	Rhode Island College of Education	Lucile Faith Manatt.
SOUTH CAROLINA.		
Rockhill	Winthrop College	Minnie Macfeat.
SOUTH DAKOTA.		
Aberdeen	Northern Normal and Industrial School	Lida M. Williams.
Madison	State Normal School	Mrs. Anna M. Brady.
Springfield	....do	Lillie S. Cooper.
TEXAS.		
Canyon	West Texas State Normal College	Edna E. Haines.
Commerce	East Texas Normal College	Durald Boren.
Denton	North Texas State Normal College	Evalina Harrington.
Do	College of Industrial Arts	Mabel M. Osgood.
San Marcus	Southwest Texas State Normal College	Helen M. Christianson.
UTAH.		
Provo	Brigham Young University	Ida Smoot Dusenberry.
Salt Lake City	University of Utah	Rose Jones.
VIRGINIA.		
Farmville	State Normal School	Mabel L. Culkin.
Harrisonburg	....do	Mary L. Seeger.
WASHINGTON.		
Bellingham	State Normal School	Gertrude Earhart.
Ellensburg	....do	Clara Meisner.
WISCONSIN.		
Milwaukee	State Normal School	Louise M. Alder.
Superior	....do	Caroline D. Barbour.

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XVI.—Directors of Summer Schools.

I. UNIVERSITIES, COLLEGES, AND NORMAL SCHOOLS.

Location.	Summer school.	Director in 1921.	Probable date of session in 1922.	
			Opening.	Closing.
ALABAMA.				
Auburn	Alabama Polytechnic Institute	Zebulon Judd	June 5	Aug. 29
Birmingham	Howard College	Wm. E. Bohannon	June 6	July 15
Centerville	Bibb County Training School	H. B. Davidson		
Daphne	Daphne State Normal School	Hillary Herbert Holmes	May 15	July 21
Florence	State Normal School	Henry J. Willingham	June 1	Aug. 18
Jacksonville	do	C. W. Daugette	June 5	Do.
Livingston	do	G. W. Brock	do	Do.
Marion	Judson College	(No summer school, 1921.)		
Montevallo	Alabama Technical Institute and College for Women.	T. W. Palmer	June 5	July 18
Montgomery	State Normal School (colored)	G. W. Trenholm	do	Aug. 5
Do	Woman's College of Alabama	(No summer school, 1921.)		
Normal	State Agricultural and Mechanical Institute (colored).	J. Henry Alston	June 5	July 15
Plateau	Mobile County Training School	Isaiah J. Whitley	June 6	Do.
Troy	State Normal School	E. M. Shackelford	June 5	Aug. 18
Tuskegee	Tuskegee Normal and Industrial Institute (colored).	E. C. Roberts	June 10	July 24
University	University of Alabama	James J. Doster	June 3	July 15
ARIZONA.				
Flagstaff	Northern Arizona Normal School	L. B. McMullen	June 19	Aug. 25
Tucson	University of Arizona	Frank Lockwood J. O. Creager Byron Cummings		
ARKANSAS.				
Arkadelphia	Ouachita College	Charles E. Dicken	June 1	Aug. 1
Batesville	Arkansas College	(No summer school, 1921.)		
Conway	Arkansas State Normal School	B. W. Torreyson	June 13	July 29
Do	Hendrix College School for Ministers	J. H. Reynolds	June 7	June 17
Fayetteville	University of Arkansas	J. R. Jewell	June 19	Aug. 2
Marianna	Lee County Training School	D. W. Hughes	June 1	July 7
CALIFORNIA.				
Arcata	Humboldt State Normal School	N. B. Van Matre	June 19	July 28
Berkeley	University of California	Walter Morris Hart	June 26	Aug. 5
Claremont	Pomona College	Charles T. Fitts	June 20	Aug. 3
Huntington Lake	Fresno State Normal School	C. L. McLane	June 1	Aug. 31
Laguna Beach	Pomona College Marine Laboratory	W. A. Hilton	June 23	Aug. 6
Los Angeles	Miss Fulmer's School	Grace Fulmer	July 5	July 26
Do	University of California (Southern Division).	B. M. Woods	July 3	Aug. 12
Do	University of Southern California	Lester B. Rogers	June 25	Aug. 15
Pacific Grove	Hopkins Marine Station	W. K. Fisher	June 22	Sept. 1
St. Helena	Pacific Union College	W. W. Ruble	June 1	July 31
San Diego	State Normal School	Edward L. Hardy	June 26	Sept. 1
San Francisco	San Francisco State Teachers College	Frederic Burk	June 28	Aug. 6
San Jose	State Teachers College	William W. Kemp	do	Do.
Santa Barbara	do	C. L. Phelps	July 1	Sept. 1
Sisson	Chico State Teachers College (Mount Shasta Summer School).	C. M. Osenbaugh	June 20	July 30
Stanford University	Leland Stanford Junior University	O. L. Elliott	do	Sept. 2
Swanton	Camp California, Summer School of Surveying (University of California).	Charles Derleth, jr	May 18	June 15
COLORADO.				
Boulder	University of Colorado	Milo G. Durham	June 19	Sept. 1
Denver	Denver Normal School	M. F. Miller	June 12	Aug. 17
Do	University of Denver	W. D. Engle	June 19	July 28
Fort Collins	Colorado Agricultural College	George T. Avery	June 12	July 21
Golden	Colorado School of Mines	Victor C. Alderson	July 15	Aug. 31
Greeley	Colorado State Teachers College	J. G. Crabbe	June 19	Aug. 25
Gunnison	Colorado State Normal School	S. Quigley	June 12	Aug. 18
Woodland Park	School of Surveying (Colorado College)	Frank M. Okey	June 1	June 30

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XVI.—Directors of Summer Schools—Continued.

I. Universities, Colleges, and Normal Schools—Continued.

Location.	Summer school.	Director in 1921.	Probable date of session in 1922.	
			Opening.	Closing.
CONNECTICUT.				
New Haven	New Haven Normal School of Gymnastics.	E. H. Arnold	July 26	Aug. 30
New Haven (Yale Station)	State Board of Education School	J. Lawrence Meader	July 5	Aug. 16
DELAWARE.				
Newark	University of Delaware	W. A. Wilkinson	June 26	Aug. 4
DISTRICT OF COLUMBIA.				
Washington	American University	A. H. Putney	June 26	Aug. 30
Do	Catholic Sisters College (Catholic University of America).	Patrick J. McCormick	July 1	Aug. 11
Do	George Washington University	W. C. Ruediger	June 19	Aug. 18
Do	National University Law School	Charles Carusi	June 15	Sept. 25
FLORIDA.				
Gainesville	University of Florida	A. A. Murphree	June 15	Aug. 8
Madison	Florida Normal Institute	M. S. McGregor	June 1	Aug. 1
Tallahassee	Florida State College for Women	Edward Conradi	June 12	Aug. 5
GEORGIA.				
Athens	State Normal School	T. J. Woofter	June 22	Aug. 1
Do	University of Georgia	...do...	June 20	Aug. 8
Atlanta	Georgia School of Technology	A. B. Morton	July 24	Sept. 14
Do	Morehouse College (colored)	John Hope	June 13	July 25
Dahlonega	North Georgia Agricultural College	(No summer school, 1921).	June 15	Aug. 1
Emory University	Emory University	Theodore H. Jack	June 20	Aug. 31
Macon	Mercer University	Peyton Jacob	June 15	Aug. 30
Milledgeville	Georgia Normal and Industrial College	John W. Good	June 14	July 26
Valdosta	South Georgia State Normal College	E. H. Powell	May 31	July 7
IDAHO.				
Albion	State Normal School	C. E. Bocock	June 5	Aug. 4
Lewiston	...do...	O. M. Elliott	June 15	Aug. 13
Moscow	University of Idaho	J. F. Messinger	...do...	Aug. 16
Pocatello	Idaho Technical Institute	Charles H. Lewis	June 10	Aug. 10
Rexburg	Ricks Normal College	Hyrum Manwaring	...do...	Aug. 25
ILLINOIS.				
Carbondale	Southern Illinois State Normal University.	H. W. Shyrock	June 21	Sept. 1
Carthage	Carthage College	H. D. Hoover	June 12	July 28
Charleston	Eastern Illinois State Teachers' College	Livingston C. Lord	...do...	Sept. 1
Chicago	American College of Physical Education.	M. A. Wood	June 27	Aug. 5
Do	Armour Institute of Technology	H. M. Raymond	June 26	Aug. 4
Do	Chicago Normal College	William B. Owen	July 1	Aug. 1
Do	Chicago Normal School of Physical Education.	Frances Musselman	June 26	July 5
Do	Columbia Normal School of Physical Education.	Mary A. Blood	June 21	Aug. 4
Do	De Paul University	D. A. Duggan	June 26	Do.
Do	Lewis Institute	George N. Carman	July 3	Aug. 25
Do	Loyola University	Frederic Siedenburg	July 1	Aug. 15
Do	National Kindergarten and Elementary College.	Edna Dean Baker	June 13	Aug. 11
Do	Pestalozzi-Froebel Teachers' College	Bertha Hofer Hegner	June 20	Aug. 1
Do	School of Elementary and Home Education.	Mary Boomer Page	July 1	July 28
Do	University of Chicago	Harry Pratt Judson	June 19	Sept. 1
De Kalb	Northern Illinois State Teachers' College.	J. Stanley Brown	June 5	Aug. 25
Evanston	Garrett Biblical Institute	Charles Macaulay Stuart.	June 19	Sept. 1
Do	Northwestern University	C. S. Marsh	June 26	Aug. 19
Ewing	Ewing College	H. A. Smoot	May 29	Do.

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XVI.—Directors of Summer Schools—Continued.

I. Universities, Colleges, and Normal Schools—continued.

Location.	Summer school.	Director in 1921.	Probable date of session in 1922.	
			Opening.	Closing.
ILLINOIS—contd.				
Lake Forest	Lake Forest University School of Music.	Marta Milinowski	June 25	Sept. 1
Lebanon	McKendree College	William C. Walton	June 19	Aug. 11
Macomb	Western Illinois State Normal School	W. P. Morgan	June 12	July 21
Normal	Illinois State Normal University	David Felmley	...do...	Aug. 31
Peoria	Bradley Polytechnic Institute	Albert F. Siepert	June 19	July 22
River Forest	Concordia Teachers' College	(No summer school, 1921.)	July 1	Aug. 10
Rock Island	Augustana College and Theological Seminary.	Gustav Andreen	June 15	July 15
Urbana	University of Illinois	Charles E. Chadsey	June 19	Aug. 12
Wheaton	Wheaton College	W. F. Rice	...do...	Aug. 11
INDIANA.				
Angola	Tri-State College	L. M. Sniff	June 6	Sept. 6
Bloomington	Indiana University	Henry Lester Smith	June 8	Aug. 18
Danville	Central Normal College	Jonathan Rigdon	May 29	
Evansville	Evansville College	Charles E. Torbet	May 8	Sept. 1
Fort Wayne	Fort Wayne Normal School	Flora Wilber		
Franklin	Franklin College	H. N. Sherwood	Apr. 13	Aug. 4
Goshen	Goshen College	C. B. Blosser	June 19	Sept. 1
Greencastle	De Pauw University	John L. Beyl	June 5	Sept. 5
Hanover	Hanover College	Clem O. Thompson	June 10	Aug. 25
Indianapolis	Butler College	J. W. Putnam	June 20	Aug. 13
Do	Indiana Central University	Horace W. Marshall	May 22	Aug. 11
Do	Indiana University School of Medicine.	Charles P. Emerson	June 15	Aug. 15
Do	North American Gymnastic Union, Normal School.	Emil Rath	June 30	July 31
Do	Teachers' College of Indianapolis	Eliza A. Blaker	Mar. 13	Aug. 31
Lafayette	Purdue University	George L. Roberts	June 11	Aug. 12
Muncie	Indiana State Normal School (Eastern Division).	Thomas J. Breitwieser	June 19	Sept. 1
Notre Dame	St. Mary's College and Academy	Sister M. Frances Inez	July 1	Aug. 5
Do	University of Notre Dame	Joseph Burke	June 28	Aug. 6
Oakland City	Oakland City College	W. P. Dearing	June 5	Aug. 25
Terre Haute	Indiana State Normal School	W. W. Parsons	June 15	Aug. 20
Valparaiso	Valparaiso University	John E. Roessler	May 30	Aug. 18
Vincennes	Vincennes University	William Halnon	May 8	Sept. 1
Winona Lake	Winona Normal School	G. C. Brandenburg	June 1	Aug. 31
IOWA.				
Ames	Iowa State College of Agriculture and Mechanic Arts.	G. M. Wilson	June 10	Aug. 25
Cedar Falls	Iowa State Teachers' College			
Cedar Rapids	Coe College	W. S. Newell	June 19	Aug. 26
Des Moines	Des Moines University	C. E. Germane	June 16	Aug. 21
Do	Drake University	A. Holmes	June 12	
Dubuque	Columbia College	John C. Stuart	June 28	Aug. 6
Do	Mount St. Joseph College	Sister Mary Antonia	June 27	Do.
Fairfield	Parsons College	Howard McDonald	June 12	Aug. 19
Fayette	Upper Iowa University	J. W. Dickiman	...do...	Do.
Indianola	Simpson College	J. P. McCoy	June 5	Aug. 20
Iowa City	University of Iowa	C. H. Weller	June 12	Aug. 25
Iowa Falls	Ellsworth College	Ida Franklin Meyer	...do...	Aug. 19
Mount Pleasant	Iowa Wesleyan College	H. E. Jaques	June 12	Aug. 19
Mount Vernon	Cornell College	Charles W. Flint	...do...	Aug. 12
Oskaloosa	Penn College	F. C. Stanley	...do...	Aug. 19
Pella	Central College	(No summer school, 1921.)	June 19	Sept. 4
Sioux City	Morningside College	Frank E. Mossman	June 12	Aug. 18
KANSAS.				
Atchison	St. Benedict's College	M. Veth	July 1	Aug. 31
Baldwin	Baker University	C. S. Parmenter	June 8	July 20
Emporia	Kansas State Normal School	Norman Triplett	June 1	July 30
Hays	Fort Hays Kansas Normal School	W. A. Lewis	May 31	July 28
Kansas City	Kansas City University	W. A. Reese	June 12	July 24
Lawrence	University of Kansas	W. H. Johnson	...do...	Aug. 18
Lindsborg	Bethany College	Ernst F. Pihlblad	June 5	Aug. 5
McPherson	McPherson College	J. A. Blair	June 1	July 10
Manhattan	Kansas State Agricultural College	Edwin L. Helton	June 2	Aug. 4

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XVI.—Directors of Summer Schools—Continued.

I. UNIVERSITIES, COLLEGES, AND NORMAL SCHOOLS—continued.

Location.	Summer school.	Director in 1921.	Probable date of session in 1922.	
			Opening.	Closing.
Newton	Bethel College	(No summer school, 1921.)	June 5	July 14
Pittsburg	State Manual Training Normal School.	W. A. Brandenburg	May 31	Aug. 25
Salina	Kansas Wesleyan University	A. H. King	June 4	July 31
Topeka	Washburn College	D. L. McEachron	June 12	July 22
Wichita	Fairmount College	F. A. Neff	June 2	July 26
Wingfield	Southwestern College	Mark Ewald	June 1	Aug. 1
KENTUCKY.				
Berea	Berea College	Cloyd N. McAllister	June 19	Aug. 27
Bowling Green	Western Kentucky State Normal School.	H. H. Cherry	June 20	Aug. 17
Frankfort	Kentucky Normal and Industrial Institute (colored).	G. P. Russell	June 14	Aug. 15
Lexington	University of Kentucky	George M. Baker	June 20	Aug. 1
Richmond	Eastern Kentucky State Normal School.	T. J. Coates	June 26	Aug. 18
Winchester	Kentucky Wesleyan College	(No summer school, 1921.)	June 1	Aug. 15
LOUISIANA.				
Baton Rouge	Louisiana State University	Delmar T. Powers	June 14	July 26
Franklinton	Washington Parish Training School	B. P. Smith	June 20	July 12
Natchitoches	Louisiana State Normal School	V. L. Roy	June 1	Aug. 8
New Orleans	Loyola University	Francis X. Twellmeyer.	June 15	July 27
Do	Tulane University of Louisiana	A. B. Dinwiddie	June 12	July 22
Do	Tulane University, School of Medicine.	do	June 15	Aug. 15
Pineville	Louisiana College	C. Cottingham	do	Aug. 30
Shreveport	Centenary College	George S. Sexton	June 8	Aug. 10
MAINE.				
Castine	Eastern State Normal School	William D. Hall	July 19	Aug. 31
Farmington	State Normal School	W. G. Mallett	June 26	Aug. 4
Fort Kent	Madawaska Training School			4
Gorham	Western State Normal School	W. E. Russell	June 26	Aug. 4
Lewiston	Bates College	Robert A. F. McDonald.	July 3	Do.
Machias	Washington State Normal School	William L. Powers	July 6	Aug. 12
Orono	University of Maine	James S. Stevens	June 26	Aug. 4
Presque Isle	Aroostook State Normal School	San Lorenzo Merriman	July 18	Aug. 25
MARYLAND.				
Annapolis	St. John's College	S. S. Handy	June 20	Aug. 2
Baltimore	Baltimore Training School for Teachers (colored).	Norman W. Cameron	July 5	Aug. 12
Do	Johns Hopkins University	Edward F. Buchner	do	Aug. 11
Do	Morgan College (colored)	Norman W. Cameron	do	Aug. 13
Do	Notre Dame College of Maryland	Sister M. Philemon	July 6	Aug. 13
Bowie	Maryland Normal and Industrial School (colored).	D. S. S. Goodloe	June 15	July 29
College Park	University of Maryland	H. F. Cotterman	June 19	July 28
Ellicott City	Rock Hill College	Brother E. Alban	June 26	Aug. 26
Frostburg	Maryland State Normal School	James Widdowson	July 5	Aug. 19
Towson	do	Lida Lee Tall	do	Aug. 12
MASSACHUSETTS.				
Amherst	Massachusetts Agricultural College	John Phelan	July 1	Aug. 1
Boston	Boston University	A. H. Rice	July 5	Aug. 19
Do	Harvard Graduate School of Medicine.	David L. Edsall	June 1	Sept. 30
Do	Northeastern College	Carl S. Ell	July 10	Sept. 8
Do	Posse Normal School of Gymnastics	Hartvig Nissen	July 5	Aug. 12
Do	Simmons College	Henry Lafavour	do	Do.
Cambridge	Howard School of Arts and Sciences	J. Tucker Murray	do	Do.
Do	Harvard School of Physical Education.	William H. Geer	July 5	Aug. 12
Do	Massachusetts Institute of Technology.	C. F. Park	June 15	Sept. 30
Fitchburg	State Normal School	William D. Parkinson	July 10	Aug. 31
Framingham	do	W. H. D. Meier	July 17	Aug. 4
Wannis	do	W. A. Baldwin	July 5	Aug. 30
ton Center	Newton Theological Institution	George E. How	June 12	June 24

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XVI.—Directors of Summer Schools—Continued.

I. UNIVERSITIES, COLLEGES, AND NORMAL SCHOOLS—continued.

Location.	Summer school.	Director in 1921.	Probable date of session in 1922.	
			Opening.	Closing.
MASSACHUSETTS—continued.				
Northampton	Smith College Training School for Social Workers.	F. Stuart Chapin	July 4	Aug. 29
Tufts College	Tufts College	John A. Pousens	July 1	Aug. 31
Woods Hole	Marine Biological Laboratory	Frank R. Lillie	June 28	Aug. 8
Worcester	Clark University	Wallace W. Atwood	July 5	Aug. 12
MICHIGAN.				
Ann Arbor	University of Michigan	Edward H. Kraus	June 20	Aug. 25
Battle Creek	Normal School of Physical Education	Linda M. Roth	July 6	Aug. 17
Berrien Springs	Emmanuel Missionary College	Frederick Griggs	June 1	Aug. 26
Detroit	Detroit Teachers College	L. J. Boneckner	June 24	Aug. 4
East Lansing	Michigan Agricultural College	E. H. Ryder	June 26	Aug. 5
Houghton	Michigan College of Mines	F. W. McNair	June 10	Sept. 10
Kalamazoo	Western State Normal School	D. B. Waldo	June 26	Aug. 4
Marquette	Northern State Normal School	James H. B. Kaye	...do	Do.
Mount Pleasant	Central State Normal School	E. C. Warriner	...do	Do.
Topinabee	University of Michigan Biological Station.	George R. La Rue	July 1	Aug. 23
Ypsilanti	Michigan State Normal College	Charles McKenny	June 26	Aug. 4
MINNESOTA.				
Bermidji	State Teachers College	M. W. Deputy	June 15	July 25
Duluth	...do	E. W. Bohannon	June 19	July 28
Mankato	...do	Charles H. Cooper	June 12	July 21
Minneapolis	University of Minnesota	J. J. Pettijohn	June 19	July 28
Moorhead	State Teachers College	O. M. Dickerson	...do	July 29
St. Cloud	...do	J. C. Brown	June 20	Do.
St. Paul	College of St. Catherine	Sister Antonia	July 1	Aug. 6
Do	Hamline University	Albert Z. Mann	June 15	July 30
Winona	College of St. Teresa	Mary A. Molloy	June 30	Aug. 11
Do	State Teachers College	G. E. Maxwell	June 12	July 12
MISSISSIPPI.				
Blue Mountain	Blue Mountain College	(No summer school, 1921).	June 1	Aug. 3
Clinton	Mississippi College	J. W. Provine	June 5	July 8
Hattiesburg	Mississippi Normal College	Joe Cook	May 29	July 7
Jackson	Millsaps College	George L. Harrell	June 15	Aug. 1
Meridian	State Normal School, Meridian College.	W. C. Williams	June 20	Do.
University	University of Mississippi	Christopher Longest	June 5	
MISSOURI.				
Cameron	Missouri Wesleyan College	Emily S. Dexter	June 5	July 29
Cape Girardeau	Southeast Missouri State Teachers College.	W. S. Dearmont	May 29	Aug. 4
Columbia	University of Missouri	A. Ross Hill	June 22	Aug. 17
Fayette	Central College	E. P. Puckett	June 5	July 31
Jefferson City	Lincoln University (colored)	C. Richardson	...do	Do.
Kirksville	State Teachers College	John R. Kirk	May 29	Aug. 4
La Grange	La Grange College	John W. Crouch	June 5	Aug. 5
Marshall	Missouri Valley College	I. N. Evrard	June 4	Aug. 10
Maryville	Northwest Missouri State Teachers' College.	Ira Richardson	May 29	Aug. 4
Rolla	State School of Mines and Metallurgy	Charles H. Fulton	June 1	Aug. 15
St. Louis	Forest Park College	Anna Sneed Cairns	...do	July 16
Do	Harris Teachers' College	E. George Payne	June 19	July 22
Do	St. Louis University	M. J. O'Connor	June 25	Aug. 3
Springfield	Southwest Missouri State Teachers' College.	Clyde M. Hill	June 1	Aug. 4
Warrensburg	Central Missouri State Teachers' College	E. L. Hendricks	...do	Aug. 6
Warrenton	Central Wesleyan College	H. Noshall	June 12	Aug. 5

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XI.—INSTITUTES OF OTHER SCHOOLS—Continued.

I. SUMMER SCHOOLS AND NORMAL SCHOOLS—Continued.

Location.	Summer school.	Director in 1921.	Probable date of session in 1922	
			Opening.	Closing.
MONTANA.				
Bozeman	Montana College of Agriculture and Mechanic Arts	W. F. Brewer	June 19	Sept. 1
Dillon	Montana State Normal College	S. E. Davis	do	Aug. 18
Missoula	University of Montana	Freeman Daughters	June 20	Sept. 1
Polson	University of Montana Biological Station.	Morton J. Elrod	June 1	July 31
NEBRASKA.				
Chadron	State Normal and Teachers' College	Robert I. Elliott	June 6	July 29
Callaway	[illegible]	H. A. Morrison	June 1	July 26
Fremont	Midland College	E. E. Stauffer	June 12	Aug. 4
Grand Island	Grand Island College	Charles Firth	June 1	Aug. 1
Hastings	Hastings College	F. E. Weyer	June 8	Aug. 8
Kearney	State Teachers' College	George E. Martin	June 5	July 28
Lincoln	University of Nebraska	A. A. Reed	June 3	Aug. 12
Omaha	Creighton University	W. P. Whelan	June 21	Aug. 2
Do	University of Omaha	Gilbert W. James	June 15	Aug. 10
Peru	State Normal and Teachers' College	E. L. Rouse	June 5	Aug. 4
University Place	Nebraska Wesleyan University	B. E. McProud	May 31	Aug. 18
Wayne	State Normal School and Teachers' College.	U. S. Conn	June 6	July 28
York	York College	C. E. Ashcraft	June 5	Do.
NEVADA.				
Reno	University of Nevada	John W. Hall	June 19	July 28
NEW HAMPSHIRE.				
Keene	State Normal School	Wallace E. Mason	July 11	Aug. 18
Plymouth	do	Ernest L. Silver	July 7	Aug. 14
NEW JERSEY.				
Convent Station	College of St. Elizabeth	Sister Mary Kathleen	July 6	Aug. 15
Hoboken	Stevens Institute of Technology	Alex C. Humphreys	Aug. 7	Sept. 2
Madison	Drew Theological Seminary	E. S. Tipple	June 1	July 31
New Brunswick	Rutgers Scientific School	Charles H. Elliott	June 28	Aug. 6
NEW MEXICO.				
Albuquerque	University of New Mexico	David S. Hill	June 15	July 22
East Las Vegas	New Mexico Normal University	Jonathan H. Wagner	June 5	July 31
Silver City	New Mexico State Normal School	W. O. Hall	June 6	July 28
Socorro	New Mexico State School of Mines	E. H. Wells	May 21	Aug. 20
NEW YORK.				
Albany	New York State College for Teachers	Harlan H. Horner	July 10	Aug. 19
Alfred	Alfred University	Paul E. Titsworth	July 5	Aug. 18
Auburn	Auburn Theological Seminary	George Black Stewart	July 10	Aug. 12
Brockport	State Normal School	(No summer school, 1921.)	July 5	Do.
Brooklyn	Adelphi College	Adelbert G. Frodenburgh.	do	Aug. 16
Buffalo	Buffalo State Normal School	Harry W. Rockwell	do	
Do	Canisius College	Miles J. O'Malia	do	Aug. 15
Do	University of Buffalo	Julian Park	July 10	Aug. 19
Geneseo	State Normal School	James V. Sturges	July 5	Aug. 11
Ithaca	Cornell University	R. M. Ogden	July 8	Aug. 18
New Paltz	State Normal School	John C. Bliss		
New Rochelle	College of New Rochelle	M. M. Xavier	July 5	Aug. 12
New York	Biblical Seminary in New York	John A. Wood	June 21	Aug. 1
Do	Chalif Normal School of Dancing	Louis H. Chalif	May 30	July 22
Do	College of the City of New York	Paul Klapper	July 5	Aug. 25
Do	Columbia University	John J. Coss	July 10	Aug. 18
Do	Fordham University	Rush Rankin	July 5	Aug. 12
Do	Hunter College of the City of New York	Adele Bildersee	do	Aug. 15
Do	New York School of Social Work	Porter R. Lee	June 15	July 31
Do	New York University	James E. Lough	July 3	Aug. 11
Oneonta	State Normal School	P. I. Bugbee	July 4	Aug. 15
Oswego	do	James G. Riggs	July 6	Do.
Plattsburg	do	George K. Hawkins	July 1	Do.
Potsdam	do	R. T. Congdon	July 5	Aug. 13

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XVI.—Directors of Summer Schools—Continued.

I. UNIVERSITIES, COLLEGES, AND NORMAL SCHOOLS—continued.

Location.	Summer school.	Director in 1921.	Probable date of session in 1922.	
			Opening.	Closing.
NEW YORK—contd.				
Rochester	University of Rochester	L. A. Pechstein	June 20	July 31
Syracuse	New York State College of Forestry (camp at Cranberry Lake, N. Y.).	Wilford E. Sanderson	June 1	Aug. 31
Do	Syracuse University	Loren C. Petry	July 10	Aug. 18
NORTH CAROLINA.				
Boone	Appalachian Training School	B. B. Dougherty	June 1	Aug. 20
Chapel Hill	Orange County Training School	B. L. Bozeman	June 20	July 29
Do	University of North Carolina	N. W. Walker	June 23	Aug. 6
Charlotte	Biddle University (colored)	H. L. McCrorey	July 1	Aug. 15
Cullowhee	Cullowhee Normal and Industrial School.	W. E. Bird	June 14	July 22
Durham	Trinity College	Holland Holton	June 25	Aug. 5
Elizabeth City	State Normal School	P. W. Moore	June 19	July 28
Fayetteville	State Normal School (colored)	E. E. Smith	June 24	July 30
Greensboro	North Carolina College for Women	John H. Cook	June 14	July 27
Greenville	East Carolina Teachers' Training School.	C. W. Wilson	June 13	Aug. 5
Hickory	Lenoir College	Q. A. Kuehner	June 15	July 23
Method	Benj. O'Kelly Training School	J. H. Bias	July 4	Aug. 12
Parmele	Parmele Training School	W. O. Chance	June 15	Aug. 31
Pembroke	Indian Normal School	T. C. Henderson	July 10	Aug. 18
Salisbury	Livingstone College (colored)	D. C. Suggs	June 15	July 30
Southport	Brunswick County Training School	J. H. Floyd	...do	July 28
Wake Forest	Wake Forest College	H. T. Hunter	...do	July 30
West Raleigh	North Carolina State College of Agriculture and Engineering.	W. A. Withers	June 13	July 26
Whiteville	Columbus County Training School	Hugh V. Brown	June 5	July 14
NORTH DAKOTA.				
Agricultural College	North Dakota Agricultural College	P. I. Iverson	June 19	July 28
Bottineau	Forestry State Normal School	Vernon Lamar Mangun.	June 15	July 22
Dickinson	State Normal School	Samuel T. May	...do	Sept. 1
Ellendale	State Normal and Industrial School	R. M. Black	June 19	Do.
Fargo	Fargo College	G. F. Henry	...do	July 31
Jamestown	Jamestown College	William B. Thomas	June 20	Do.
Mayville	State Normal School	John O. Evjen	June 21	Sept. 2
Minot	...do	L. H. Beeler	June 26	Sept. 15
University	University of North Dakota	Joseph Kennedy		
Valley City	State Teachers College	C. E. Allen	June 20	Sept. 1
OHIO.				
Ada	Ohio Northern University	John Davison	May 31	Aug. 9
Akron	Municipal University of Akron	P. R. Kolbe		
Alliance	Mount Union College	J. B. Bowman		
Ashland	Ashland College	J. E. Jacobs	June 10	Sept. 10
Athens	Ohio University	W. W. McIntire	June 17	July 28
Berea	Baldwin-Wallace College	Frederick Cramer	June 1	July 31
Bluffton	Bluffton College	E. J. Hirschler	June 5	Sept. 5
Bowling Green	State Normal College	H. B. Williams	June 20	Aug. 31
Cincinnati	St. Xavier College	G. R. Kister	June 21	Aug. 9
Do	University of Cincinnati	G. A. Tawney	June 26	Aug. 12
Cleveland	Case School of Applied Science	Charles Sumner Howe	...do	Aug. 4
Do	Cleveland School of Education (Western Reserve University and Cleveland Normal School).	Ambrose L. Suhrie	June 19	Aug. 26
Columbus	Capital University	No summer school, 1921.	July 1	Aug. 15
Do	Ohio State University		July 1	Sept. 1
Defiance	Defiance College	A. G. Caris	June 19	Sept. 7
Findlay	Findlay College	William Harris Guyer		
Kent	State Normal College	J. E. McGilvrey	June 21	Sept. 1
Maria Stein	Normal School of the Precious Blood	Sister M. Angeline	June 28	Aug. 4
New Concord	Muskingum College	J. G. Lowery	June 19	Sept. 1
Oberlin	Oberlin College	Edward A. Miller	June 23	Aug. 10
Oxford	Miami University	H. C. Minnich	May 10	Sept. 1
Put-in Bay	Ohio State University Lake Laboratory.	Raymond G. Osburn	June 19	July 30
Rio Grande	Rio Grande College	W. A. Lewis	...do	Do.
Springfield	Wittenberg College	T. Bruce Birch	...do	Do.
Toledo	St. John's University	William J. Engelen	June 26	Aug. 4

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XVI.—Directors of Summer Schools—Continued.

I. UNIVERSITIES, COLLEGES, AND NORMAL SCHOOLS—continued.

Location.	Summer school.	Director in 1921.	Probable date of session in 1922.	
			Opening.	Closing.
OHIO—continued.				
Toledo	Toledo University	Walter Brown	July 5	Aug. 12
Wilberforce	Wilberforce University (colored)	Gilbert H. Jones	June 21	Aug. 1
Wilmington	Wilmington College	J. Edwin Jay	June 19	Sept. 2
Wooster	College of Wooster	H. D. Simpson		
OKLAHOMA.				
Ada	East Central State Teachers' College	A. Linscheid	May 21	July 22
Alva	Northwestern State Normal School	J. P. Battenberg	May 25	Aug. 1
Durant	Southeastern State Teachers' College	H. G. Bennett	May 26	July 28
East Enid	Phillips University	M. L. Perkins	June 1	July 31
Edmond	Central State Teachers' College	John G. Mitchell	May 29	July 28
Langston	Colored Agricultural and Normal University.	J. M. Marquess	June 5	July 29
Norman	University of Oklahoma	W. W. Phelan	June 3	Aug. 1
Stillwater	Oklahoma Agricultural and Mechanical College.	H. P. Patterson	June 1	July 31
Tahlequah	Northeastern State Normal School	W. T. Ford	...do...	Aug. 1
Tulsa	University of Tulsa	J. M. Gordon	June 10	Aug. 19
Weatherford	Southwestern State Teachers' College	A. H. Burris	May 25	July 22
OREGON.				
Corvallis	Oregon State Agricultural College	M. Ellwood Smith	June 19	July 20
Eugene	University of Oregon	Colin Dyment	June 20	Aug. 1
Monmouth	Oregon Normal School	J. S. Sanders	June 26	Sept. 26
Mount Angel	Mount Angel Academy and Normal School.	Sister M. Rose	June 19	Aug. 1
Oswego	Marylhurst Normal School	Sister Mary Margaret	...do...	July 28
Portland	University of Oregon Extension	George Rebec	June 20	July 29
Salem	Willamette University	W. H. Hertzog	July 1	Aug. 15
PENNSYLVANIA.				
Allentown	Cedar Crest College	(No summer school, 1921).	July 5	Aug. 12
Do	Muhlenberg College	Isaac Miles Wright	July 1	Aug. 15
Annville	Lebanon Valley College	T. Bayard Beatty	June 21	Aug. 4
Beaver Falls	Geneva College	A. A. Johnston	June 19	Aug. 19
Bethlehem	Lehigh University	Natt M. Emery	July 5	Aug. 12
Bloomsburg	State Normal School	C. H. Fisher	June 19	Aug. 26
Bryn Mawr	Bryn Mawr College	S. M. Kingsbury	June 15	Aug. 15
California	Southwestern State Normal School	John A. Entz	June 19	Aug. 19
Cheyney	Cheyney Training School for Teachers (colored).	(No summer school, 1921).	June 21	Aug. 23
Clarion	Clarion State Normal School	Clyde C. Green	June 20	Aug. 20
Collegeville	Ursinus College	Whorten A. Kline	June 26	Aug. 4
Easton	Lafayette College	D. B. Prentice, H. T. Spengler	June 15	July 7
East Stroudsburg	State Normal School	Frank E. Baker	June 19	Aug. 18
Edinboro	Edinboro State Normal School	A. G. Crane	...do...	Aug. 19
Grove City	Grove City College	Weir C. Ketler	June 20	Aug. 18
Huntingdon	Juniata College	A. W. Duplee	June 19	Aug. 19
Indiana	State Normal School	John A. H. Keith	...do...	Do.
Kutztown	Keystone State Normal School	A. C. Rothermel	June 9	Do.
Lock Haven	Central State Normal School	Warren Nevin Drum	June 20	Aug. 20
Mansfield	Mansfield State Normal School	A. T. Belknap	June 19	Aug. 19
Meadville	Allegheny College	C. F. Ross	June 21	Aug. 1
Millersville	State Normal School	C. H. Gordinier	June 13	Aug. 13
Philadelphia	La Salle College	Brother F. John	July 1	Aug. 1
Do	Temple University	James H. Dunham	July 5	Aug. 16
Do	University of Pennsylvania	H. Lamar Crosby	...do...	Aug. 19
Pittsburgh	Carnegie Institute of Technology	R. M. Ihrig	June 27	Do.
Do	Duquesne University	M. A. Hehir	July 1	Aug. 31
Do	University of Pittsburgh	W. G. Chambers	July 6	Aug. 26
Shippensburg	Cumberland Valley State Normal School.	Ezra Lehman	June 19	Aug. 19
Slippery Rock	Slippery Rock State Normal School	J. Linwood Eisenberg	...do...	Aug. 20
State College	Pennsylvania State College		June 26	Aug. 25
Villanova	Villanova College	W. G. Rofter	July 1	Aug. 12
Washington	Washington and Jefferson College	M. A. Dickie	June 15	Aug. 7
Waynesburg	Waynesburg College	(No summer school, 1921.)	June 21	Aug. 26
West Chester	State Normal School	Andrew Thomas 4th.	June 19	Aug. 19

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XVI.—Directors of Summer Schools—Continued.

I. Universities, Colleges, and Normal Schools—continued.

Location.	Summer school.	Director in 1921.	Probable date of session in 1922.	
			Opening.	Closing.
PORTO RICO.				
Rio Piedras	University of Porto Rico	A. G. Steele	July 5	Do.
RHODE ISLAND.				
Providence	Rhode Island College of Education	John L. Alger	July 10	Aug. 18
SOUTH CAROLINA.				
Clinton	Presbyterian College of South Carolina.	D. M. Douglas	June 13	Aug. 4
Columbia	Benedict College (colored)		June 1	July 12
Do	University of South Carolina	J. A. Stoddard	June 15	July 21
Greenville	Furman University	W. J. McGlothlin	June 14	July 22
Marion	Marion County Training School (colored).	John P. Burgess	Aug. 2	Sept. 10
Newberry	Newberry College	S. J. Derrick	July 10	Aug. 20
Orangeburg	State Agricultural and Mechanical College.	R. S. Wilkinson	June 12	July 21
Rock Hill	Winthrop College	D. B. Johnson	June 20	July 28
Spartanburg	Converse College	Guy E. Snavely		
Do	Wofford College Fitting School	W. C. Herbert	June 15	Aug. 15
SOUTH DAKOTA.				
Aberdeen	Northern Normal and Industrial School.	Harold W. Foght	June 12	Aug. 30
Brookings	South Dakota State College of Agriculture and Mechanic Arts.	H. B. Mathews	June 19	Sept. 1
Huron	Huron College	Harold G. Laurance	June 20	July 31
Madison	Eastern State Normal School	E. C. Higbie	June 6	Aug. 26
Mitchell	Dakota Wesleyan University	M. J. Holmes	June 10	Aug. 31
Sioux Falls	Augustana College and Normal School.	(No summer school, 1921.)	June 19	July 31
Do	Sioux Falls College	V. C. Coulter	June 12	Aug. 19
Spearfish	State Normal School	M. S. Hallman	June 7	Aug. 25
Springfield	Southern State Normal School	C. G. Lawrence	June 15	Aug. 22
Vermilion	University of South Dakota	William A. Cook	June 19	July 29
Yankton	Yankton College	G. H. Durand	June 15	Aug. 1
TENNESSEE.				
Harrogate	Lincoln Memorial University	Thomas B. Ford	May 15	Aug. 4
Jackson	Union University	H. E. Watters	June 8	Aug. 10
Jefferson City	Carson and Newman College	O. E. Sams	June 1	Aug. 15
Johnson City	East Tennessee State Normal School	Sidney G. Gilbreath	June 5	Aug. 12
Knoxville	Summer School of the South (University of Tennessee).	J. A. Thackston	June 13	Aug. 31
Martin	Hall-Moody Normal School	James T. Warren	June 1	July 20
Morristown	Morristown Normal and Industrial College (colored).	(No summer school, 1921.)	June 15	Aug. 1
Murfreesboro	Middle Tennessee State Normal School.	P. A. Lyon	June 6	July 15
Nashville	Agricultural and Industrial State Normal School (colored).	W. J. Hale	June 10	July 25
Do	Fisk University (colored)	F. A. McKenzie	June 9	Aug. 31
Do	George Peabody College for Teachers	Bruce A. Payne	June 6	Aug. 26
Normal	West Tennessee State Normal School	Andrew A. Kincannon	June 5	Aug. 12
Sewanee	University of the South	R. B. Davis	June 20	Aug. 31
Somerville	Fayette County Industrial and Agricultural School.	W. P. Ware	July 3	July 29
TEXAS.				
Abilene	Abilene Christian College	Henry Eli Speck	June 12	Aug. 23
Do	Simmons College	J. D. Sandeger	June 14	Aug. 19
Alpine	Sul Ross State Normal College	R. S. Marquis	July 4	Aug. 20
Arlington	Grubbs Vocational College	M. S. Williams	June 12	Aug. 10
Austin	University of Texas	Frederick Eby	June 13	Aug. 31
Belton	Baylor Female College	E. G. Townsend	June 7	Aug. 12
Brownswood	Daniel Baker College	(No summer school, 1921.)	June 14	Aug. 30
Do	Howard Payne College	L. J. Mims	June 12	Aug. 12
Canyon	West Texas State Normal College	J. A. Hill, B. F. Sisk	June 8	Aug. 23
Clarendon	Clarendon College	S. H. Condron	May 31	July 15
College Station	Agricultural and Mechanical College of Texas.	J. Oscar Morgan	June 13	Sept. 1

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XVI.—Directors of Summer Schools—Continued.

I. UNIVERSITIES, COLLEGES, AND NORMAL SCHOOLS—continued.

Location.	Summer school.	Director in 1921.	Probable date of session in 1922.	
			Opening.	Closing.
TEXAS—continued.				
Commerce	East Texas Normal College	R. B. Binnion	June 5	Aug. 25
Dallas	Southern Methodist University	C. A. Nichols	June 14	Sept. 2
Do	University of Dallas	(No summer school, 1921.)	June 2	
Denton	College of Industrial Arts	F. G. Jones	June 6	Aug. 29
Do	North Texas State Normal College	E. D. Criddle	June 9	Aug. 26
Ft. Worth	Texas Christian University	Colby D. Hall	June 12	Aug. 18
Do	Texas Woman's College	H. E. Stout	June 6	Aug. 2
Georgetown	Southwestern University	Randolph W. Tinsley	June 15	Aug. 31
Greenville	Wesley College	George B. Jackson	June 1	Aug. 5
Hallettsville	Colored Industrial Training School	W. D. Newton	June 5	July 15
Huntsville	Sam Houston State Normal School	J. L. Clark H. F. Estill	June 6	Aug. 24
Marshall	College of Marshall	W. F. Garner	June 5	Aug. 25
Prairie View	Prairie View Normal and Industrial College (colored).	L. R. Rosey	June 8	Aug. 1
San Antonio	Our Lady of the Lake College	Mother M. Philothea	June 26	Aug. 6
San Marcos	Southwestern Texas State Normal School.	C. E. Evan	June 15	Aug. 15
Seminary Hill	Southwestern Baptist Theological Seminary.	L. R. Scarborough	June 1	July 8
Sherman	Austin College	T. J. Leslie	June 8	Aug. 8
Stephenville	John Tarleton Agricultural College	J. D. Bramlette	June 11	Aug. 11
Tehuacana	Westminster College	C. N. Comfort	June 5	Aug. 11
Waco	Baylor University	S. P. Brooks	June 19	Sept. 1
UTAH.				
Logan	Agricultural College of Utah	James H. Linford	June 5	Aug. 25
Provo	Brigham Young University	George H. Brimhall	June 1	July 31
Salt Lake City	University of Utah	Milton Bennion	June 7	Aug. 26
VERMONT.				
Burlington	University of Vermont and State Agricultural College.	F. B. Jenks	July 3	Aug. 11
Middlebury	Middlebury College	Edward D. Collins	June 30	Aug. 17
Northfield	Norwich University	Arthur E. Winslow	July 1	Aug. 31
VIRGINIA.				
Blacksburg	Virginia Polytechnic Institute	J. W. Watson	June 19	July 29
East Radford	State Normal School for Women	John P. McConnell	June 16	Sept. 2
Emory	Emory and Henry College	H. M. Henry	June 15	July 27
Farmville	Farmville State Normal School	J. L. Jarman	June 20	July 30
Fredericksburg	State Normal School	A. B. Chandler	June 18	Sept. 1
Hampton	Hampton Institute (colored)	George P. Phenix	June 20	July 28
Harrisonburg	State Normal and Industrial School for Women.	Samuel P. Duke	June 19	Sept. 1
Petersburg	Virginia Normal and Industrial Institute.	John M. Gandy	June 15	Sept. 15
Richmond	University of Richmond	W. L. Prince	do	July 30
Rockbridge Baths	Virginia Military Institute	B. B. Mayo	July 20	Sept. 4
University	University of Virginia	Charles G. Maphis	June 19	Sept. 2
Williamsburg	College of William and Mary	K. J. Hoke	June 15	Sept. 1
WASHINGTON.				
Bellingham	State Normal School	G. W. Nash	June 5	Aug. 18
Centralia	Washington State Normal School	(No summer school, 1921).	July 7	Aug. 20
Cheyney	State Normal School	N. P. Showalter	June 5	Aug. 10
Ellensburg	do	H. C. Fish	June 12	Aug. 25
Friday Harbor	Puget Sound Biological Station	T. C. Frye	June 20	Aug. 1
Pullman	State College of Washington	A. A. Cleveland	June 12	July 21
Puyallup	School of Agriculture for Teachers (State College of Washington).	N. J. Aiken	June 15	Aug. 1
Seattle	Holy Names Academy and Normal School.	Sister M. Dolorosa	July 3	Aug. 11
Do	University of Washington	Frederick E. Bolton	June 20	Aug. 30
Spokane	Holy Names Normal School	Sister Mary Lorentia	June 15	Aug. 1
Tacoma	College of Puget Sound	F. L. Gjesdahl	June 12	Aug. 11

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XVI. Directors of Summer Schools—Continued.

I. UNIVERSITIES, COLLEGES, AND NORMAL SCHOOLS—continued.

Location.	Summer school.	Director in 1921.	Probable date of session in 1922.	
			Opening.	Closing.
WEST VIRGINIA.				
Athens	Concord State Normal School	Fred A. Forster	June 13	Aug. 8
Bethany	Bethany College	J. Allan Hunter	June 19	July 29
Elkins	Davis and Elkins College	James E. Allen	June 20	July 1
Fairmont	State Normal School	Joseph Rosier	June 15	Aug. 7
Glenville	....do	E. G. Rohrbaugh	...do	Aug. 1
Huntington	Marshall College	F. R. Hamilton	June 12	Aug. 25
Institute	West Virginia Collegiate Institute (colored).	S. H. Guss	June 14	July 21
Morgantown	West Virginia University	Waitman Barbe	June 12	Aug. 25
Salem	Salem College	S. O. Bond	June 5	Aug. 7
Shepherdstown	Shepherd College State Normal School	W. H. S. White	June 13	Aug. 8
West Liberty	State Normal School	Howard J. McGinnis	June 12	Aug. 11
WISCONSIN.				
Ashland	Ashland County Training School	J. M. Lorscheter	June 19	July 30
Beloit	Beloit College	W. A. Hamilton	June 26	Aug. 5
Berlin	Green Lake County Training School	J. F. Casavaugh	June 12	July 24
Columbus	Columbia County Normal School	M. C. Palmer	June 20	Aug. 1
Eau Claire	Eau Claire County Training School	F. E. Jaastad		
Do	Eau Claire State Normal School	H. A. Schofield	June 20	Aug. 1
Janesville	Rock County Training School	Frank J. Lowth	June 21	July 29
Kaukauna	Outagamie County Training School	W. P. Hagmann	June 15	July 31
La Crosse	State Normal School	F. A. Cotton	June 19	Aug. 28
Ladysmith	Rusk County Training School	R. M. Dresden	June 26	Aug. 4
Madison	University of Wisconsin	S. H. Goodnight	...do	Do.
Marinette	Stephenson Training School	Elizabeth M. King		
Medford	Taylor County Training School	(No summer school, 1921.)	June 23	Aug. 4
Menomonie	Stout Institute	C. A. Bowman	June 30	Aug. 31
Merrill	Lincoln County Training School	E. W. McCrary	June 15	July 20
Marquette	Marquette University	John P. McNichols	June 26	Aug. 5
Milwaukee	National Teachers' Seminary	Max Griebsch	...do	July 29
Do	State Normal School	Carroll G. Pearse	June 19	July 28
Monroe	Green County Training School	C. H. Dietz	June 5	July 14
New Lisbon	Juneau County Teachers' Training School.	C. W. McNown	June 26	Aug. 4
Oshkosh	State Normal School	H. A. Brown	June 19	July 28
Phillips	Price County Training School	William Milne	...do	Do.
Platteville	State Normal School	J. C. Brockett	June 12	July 21
Prairie du Chien	Campion College	James B. Macelwane	June 25	Aug. 8
Rice Lake	Barron County Training School	L. P. Bunker	July 1	Aug. 15
Richland Center	Richland County Normal School	(No summer school, 1921).	July 3	Aug. 9
River Falls	State Normal School	J. H. Ames	June 15	July 25
St. Francis	Pio Nono College	Joseph J. Pierron	July 1	Aug. 15
Sinsinawa	St. Clara College	Sister M. Gabriella	...do	July 26
Stevens Point	State Normal School	John F. Sims	June 19	July 30
Superior	....do	V. E. McCaskill	...do	Aug. 2
Union Grove	Racine-Kenosha Joint County Training School.	Arthur J. Smith	Aug. 1	Aug. 31
Viroqua	Vernon County Normal School	(No summer school, 1921.)	June 25	Aug. 25
Whitewater	State Normal School	F. S. Hyer	June 19	July 28
WYOMING.				
Laramie	University of Wyoming	C. R. Maxwell	June 19	July 29

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XVI.—Directors of Summer Schools—Continued.

II. SECONDARY SCHOOLS (INCLUDING INSTITUTIONS OF HIGHER RANK NOT APPEARING IN PART I).

Location.	Summer school.	Director in 1921.	Probable date of session in 1922.	
			Opening.	Closing.
ALABAMA.				
Birmingham	Miles Memorial College (colored)	R. T. Brown	June 6	July 16
Huntsville	Oakwood Junior College (colored)	J. I. Beardsley	June 1	Aug. 1
Seale	Russell County Training School	(No summer school, 1921.)	June 5	Aug. 4
Selma	Selma University	W. H. Dinkins	...do	July 14
Tuscaloosa	Stillman Institute (colored)	Paul H. Moore	...do	Do.
CALIFORNIA.				
Berkeley	California School of Arts and Crafts	Frederick H. Meyer	June 19	July 29
Los Angeles	Krotona Institute of Theosophy	George H. Hall	June 15	Sept. 15
Piedmont	Class in Outdoor Sketching and Painting.	Frederick H. Meyer	June 19	July 29
Riverside	Riverside Library Service School	Joseph F. Daniels	June 19	July 28
San Francisco	California School of Fine Arts	Lee F. Randolph	...do	Do.
CONNECTICUT.				
Greenwich	Fairhope Summer School	Marietta Johnson	July 5	Aug. 18
New Haven	Fox Tutoring School	George L. Fox	Aug. 1	Sept. 26
Norwalk	Harström School	Carl Axel Harström	July 31	Sept. 18
Stamford	Massee Country School	W. W. Massee	June 25	Do.
DELAWARE.				
Dover	State College for Colored Students	Clarence R. Whyte	July 5	Aug. 16
DISTRICT OF COLUMBIA.				
Washington	Emerson Institute	W. H. Randolph	June 15	Sept. 1
FLORIDA.				
Delray	County Training School		June 5	Aug. 5
Tallahassee	Florida Agricultural and Mechanical College for Negroes.	Everett B. Jones	June 20	Aug. 12
GEORGIA.				
Mount Berry	The Berry Schools	Martha Berry	June 1	July 1
HAWAII.				
Honolulu	Territorial Summer School	William McCluskey	July 5	Aug. 12
ILLINOIS.				
Chicago	American Conservatory of Music	John J. Hattsteadt	June 26	Aug. 5
Do	Applied Arts School	Florence H. Fitch	July 1	July 30
Do	Art Institute of Chicago	Fanny J. Kendall	July 3	Sept. 9
Do	Chicago Academy of Fine Arts	Carl N. Wentz	June 27	Sept. 2
Do	Chicago Musical College	Felix Borowski, Carl D. Kinsey	June 28	Aug. 8
Do	Columbia School of Music	Clare Osborne Reed	May 15	July 29
Do	Cosmopolitan School of Music and Dramatic Art.	William Carver Williams.	June 26	Do
Do	Gregg School	Henry J. Holm	July 3	Aug. 11
Do	Industrial Art School	Hugo B. Froelich, Bonnie E. Snow	June 27	Aug. 4
Do	Sherwood Music School	Walter Keller	June 30	Aug. 6
Evanston	American Institute of Normal Methods.	Frank D. Farr	June 25	July 14
Quincy	Gem City Business College	T. E. Musselman	May 31	Sept. 1
INDIANA.				
Culver	Culver Summer Schools	S. R. Gigiulliat	June 28	Aug. 23
Ferdinand	Academy of the Immaculate Conception.	Mother M. Seraphina	June 24	Aug. 1
Indianapolis	Art School of the John Herron Art Institute.	Harold Haven Brown	June 18	July 31
Do	Indiana College of Music and Fine Arts.	Harry G. Hill	June 26	Aug. 26

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XVI.—Directors of Summer Schools—Continued.

II. SECONDARY SCHOOLS (INCLUDING INSTITUTIONS OF HIGHER RANK NOT APPEARING IN PART I)—continued.

Location.	Summer school.	Director in 1921.	Probable date of session in 1922.	
			Opening.	Closing.
INDIANA—continued.				
Indianapolis	Metropolitan School of Music	Flora M. Hunter / Edward Nell	July 26	Aug. 13
Do	School for Librarians	William J. Hamilton	June 14	July 27
North Manchester	Manchester College	Otho Winger	May 22	Aug 13
Oldenburg	Immaculate Conception Normal	Sister Mary de Sales	June 28	July 31
St. Mary-of-the Woods.	St. Mary-of-the-Woods College	Mother M. Cleophas	July 3	Aug. 3
Ubee	Huntington College	D. R. Ellabarger	June 1	Aug. 15
IOWA.				
Cedar Rapids	Palmer Method School	W C. Henning	June 26	July 21
Cherokee	Mt. St. Mary Normal Training School.	Sister M. Emmanuel	June 19	Aug. 1
LOUISIANA.				
Baton Rouge	Southern University (colored)	W. D. Thomas	June 12	July 28
Lafayette	Southwestern Louisiana Institute	Edwin L. Stephens	June 5	Aug. 5
Ruston	Louisiana Polytechnic Institute	J. E. Keeny	June 19	July 30
MAINE.				
Boothbay Harbor	Commonwealth School of Art	Asa G. Randall	July 5	Aug. 27
MARYLAND.				
Baltimore	Peabody Conservatory of Music	Frederick R. Huber	July 1	Aug. 13
MASSACHUSETTS.				
Auburndale	American Institute of Normal Methods.	Osborne McConathy	July 6	July 27
Boston	Burdette College	I. S. Lindabury	June 15	Sept. 15
Do	Emerson College of Oratory	Walter B. Tripp	July 5	Aug. 12
Do	Miss Farmer's School of Cookery	Alice Bradley	June 1	July 31
Do	School of Eugenics	Evangeline W Young		
Do	School of Expression	S. S. Curry [1] / Anna Bright Curry [2]	May 16	Oct. 1
East Gloucester	Breckenridge School of Painting	Hugh H. Breckenridge	July 5	Aug. 30
Lynn	Branch of Burdette College	H. W. Pelton	July 3	Aug. 18
Monterey	Berkshire School of Art	Raymond P. Ensign / Ernest W. Watson	..do	Aug. 11
Northampton	Institute of Music Pedagogy	Ralph L. Baldwin	July 5	July 20
Oak Bluff	Treat Tutoring School	Edwin Bryant Treat	May 1	Oct. 1
Provincetown	Cape Cod School of Art	H. N. Campbell	July 5	Aug. 28
Do	School of Drawing and Painting	E. Ambrose Webster	July 1	Oct. 1
Springfield	Bay Path Institute	M. F. Palmer	...do	July 31
Vineyard Haven	Martha's Vineyard School of Art	Arthur R. Freelander	...do	Aug. 20
Warren	Woburn Academy	C. E. Carter	...do	Aug. 31
Worcester	Worcester Girls Trade School	(No summer school, 1921.)	July 10	Aug. 18
MICHIGAN.				
Big Rapids	Ferris Institute	W. N. Ferris	July 5	Aug. 13
Fountain	International Society School of Applied Psychology.	Orlando Edgar Miller	Aug. 1	Aug. 31
Saugatuck	School of Painting	Frederick F. Fursman	June 27	Sept. 3
MINNESOTA.				
Faribault	Shattuck School	John Hersey Wheeler	June 19	July 29
Minneapolis	Humboldt College	J. P. Peterson	June 1	Aug. 31
Do	Minneapolis School of Art	Mary Moulton Pheney	June 19	July 29
Do	Minnesota College	Frank Nelson	May 31	July 26
MISSISSIPPI.				
Clarksdale	Clarksdale Negro Normal School	H. B. Heidelberg	Aug. 9	Sept. 12
Jackson	Jackson College (colored)	B. B. Dausburg	June 1	July 15
Mound Bayou	Bolivar County Training School	J. H. Moseley	July 15	Aug. 25
Shelby	Industrial and Agricultural College for Negroes.	J. M. Williamson	...do	Sept. 1

[1] Conducted term in Boston, Mass. [2] Conducted term in Asheville, N. C.

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XVI.—Directors of Summer Schools—Continued.

II. SECONDARY SCHOOLS (INCLUDING INSTITUTIONS OF HIGHER RANK NOT APPEARING IN PART I)—continued.

Location.	Summer school.	Director in 1921.	Probable date of session in 1922.	
			Opening.	Closing.
MONTANA.				
Lewistown	Central Montana Regional School	F. L. Cummings	June 19	Aug. 19
Miles City	Eastern Montana School	A. T. Peterson	June 1	Aug. 31
NEW HAMPSHIRE.				
Bristol	Pasquaney Nature Club	Laura Hoover Hassan	June 29	Aug. 31
Exeter	Phillips Exeter Academy	John C. Kirkland	July 11	Sept. 1
NEW JERSEY.				
Allenhurst	Rand School	Edwin Watson Rand	July 1	Sept. 30
Princeton	Princeton School	C. R. Morey	July 26	Do.
Do	Princeton Tutoring School	John Gale Hun	July 18	Sept. 5
NEW YORK				
Albany	New York State Library School	J. I. Wyer, Jr.	July 5	Aug. 15
Cliff Haven	Catholic Summer School of America	John E. Flood	July 1	Sept. 1
Cold Spring Harbor	Biological Laboratory of the Brooklyn Institute of Arts and Sciences.	Charles B. Davenport	July 5	Aug. 16
Monroe	Mackenzie School	James C. Mackenzie	June 1	Aug. 31
New York	Brown Tutoring School	F. L. Brown	July 5	Sept. 15
Do	Clarence H. White School of Photography.	Clarence H. White	...do...	Aug. 26
Do	New York Preparatory School	Emil E. Camerer	June 19	Sept. 8
Do	New York School of Fine and Applied Arts.	Frank Alvah Parsons	July 5	Aug. 18
Do	Palmer Method School	A. N. Palmer	June 24	July 29
Nyack	Seymour School of Musical Reeducation.	Harriet Ayer Seymour, Marshall Bartholomew	July 1	Sept. 1
Rochester	Rochester Athenaeum and Mechanics Institute.	Alfred A. Johns	June 25	Aug. 18
Do	Rochester Business Institute	S. C. Williams, John F. Forbes	July 5	July 31
St. Josephs	St. Joseph's Vacation School	Mother Polycarpa	July 6	Aug. 11
Woodstock	Woodstock School of Landscape Painting of the Art Students League.	Charles Rosen	June 15	Oct. 15
NORTH CAROLINA.				
Asheville	Asheville Normal	John E. Calfee	June 15	July 29
Brevard	Brevard Institute	L. B. Haynes	June 13	July 21
Buies Creek	Buies Creek Academy	J. A. Campbell	May 31	June 15
Durham	National Training School	James E. Shepard	June 20	July 29
Greensboro	Agricultural and Technical College (colored).	F. D. Bluford	July 27	Aug. 7
Red Springs	State Approved and County Summer School.	L. Lee White	June 20	July 30
OHIO.				
Cincinnati	Art Academy of Cincinnati	J. H. Gest	June 19	Aug. 26
Do	Ohio Mechanics Institute	John T. Faig	June 20	July 31
Columbus	Capitol College of Oratory and Music	James A. Burns	June 15	Aug. 1
OKLAHOMA.				
Goodwell	Panhandle Agricultural and Mechanical College.	George A. Coffey	May 30	July 26
OREGON.				
Portland	Link's Business School	A. T. Link	June 3	Aug. 15
PENNSYLVANIA.				
Lancaster	Franklin and Marshall Academy	E. M. Hartman	June 18	July 28
Muncy	Lycoming County Normal School	Sylvester B. Dunlap	Apr. 1	Sept. 1
Oberlin	Oberlin Business College	J. T. Henderson	June 13	Aug. 8
Philadelphia	Brown Preparatory School	Alonzo Brown	June 20	Sept. 1
Do	Neff College	Silas Neff	June 30	July 31
Do	Peirce School of Business Administration.	Louis B. Moffett	July 5	Aug. 11
Do	Pennsylvania Museum and School of Industrial Art.	Huger Elliott	July 1	July 31
Pittsburgh	Byron W. King's School of Oratory	Byron W. King	June 13	July 29
Willoughby	Andrews Institute for Girls	S. D. Shankland	June 19	July 28

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XVI.—Directors of Summer Schools—Continued.

II. SECONDARY SCHOOLS (INCLUDING INSTITUTIONS OF HIGHER RANK NOT APPEARING IN PART I)—continued.

Location.	Summer school.	Director in 1921.	Probable date of session in 1922.	
			Opening.	Closing.
TENNESSEE.				
Cookeville	Tennessee Polytechnic Institute	Q. M. Smith	June 3	July 20
Walling	Webb School	W. R. Webb	June 8	Aug. 15
TEXAS.				
Marshall	Wiley University	G. Whitte Jordan	June 14	Sept. 3
San Antonio	Incarnate Word College	P. H. Underwood	June 15	July 27
VIRGINIA.				
Laurenceville	St. Paul's Normal and Industrial School (colored).	James S. Russell	June 20	July 20
Manassas	Manassas Industrial School	Edward D. Howe	July 1	July 31
Norfolk	Norfolk Summer Normal School (colored).	D. G. Jacox	June 20	July 15

III. SUMMER NORMAL TRAINING SCHOOLS.

CONNECTICUT.				
New Haven	State Summer Normal School	J. L. Meader	July 5	Aug. 12
LOUISIANA.				
Alexandria	Rapides Parish Training School for Negroes.	R. E. Brown	Eight weeks.	
Bastrop	Morehouse Parish Training School for Negroes.	R. G. Steptoe	Do.	
Baton Rouge	East Baton Rouge Parish Training School for Negroes.	J. M. Frazier	Do.	
Bernice	Union Parish Training School for Negroes.	Harris Hamilton	Do.	
Coushatta	Red River Parish Training School for Negroes.	J. W. Thomas	Do.	
Delhi	Richland Parish Training School for Negroes.	H. E. Parker	Do.	
De Ridder	Beauregard Parish Training School for Negroes.	Y. A. Le Noir	Do.	
Dodson	Winn Parish Training School for Negroes.	G. L. Hawk	Do.	
Franklinton	Washington Parish Training School for Negroes.	B. P. Smith	Do.	
Gibsland	Bienville Parish Training School for Negroes.	J. D. Stewart	Do.	
Homer	Claiborne Parish Training School for Negroes.	F. H. Hendrix	Do.	
Kentwood	Tangipahoa Parish Training School for Negroes.	O. W. Dillon	Do.	
Lake Providence	East Carroll Parish Training School for Negroes.	G. W. Griffin	Do.	
Lukeville	West Baton Rouge Parish Training School for Negroes.	J. W. Lee	Do.	
Many	Sabine Parish Training School for Negroes.	W. B. Purvis	Do.	
Minden	Webster Parish Training School for Negroes.	J. H. Whaley	Do.	
Monroe	Ouachita Parish Training School for Negroes.	M. J. Foster	Do.	
Natchitoches	Natchitoches Parish Training School for Negroes.	W. F. Booker	Do.	
New Orleans	Orleans Parish Training School for Negroes.	A. E. Perkins	Do.	
Oakdale	Allen Parish Training School for Negroes.	T. J. Simpson	Do.	
Opelousas	St. Sandry Parish Training School for Negroes.	J. H. Augustine	Do.	
Patterson	St. Mary Parish Training School for Negroes.	G. C. Jones	Do.	
Ruston	Lincoln Parish Training School for Negroes.	S. B. Belton	Do.	

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XVI.—Directors of Summer Schools—Continued.

III. SUMMER NORMAL TRAINING SCHOOLS—continued.

Location.	Summer school.	Director in 1921.	Probable date of session in 1922.	
			Opening.	Closing.
LOUISIANA—contd.				
Shreveport	Caddo Parish Training School for Negroes.	R. P. Player	Eight Weeks.	
Tallulah	Madison Parish Training School for Negroes.	C. H. Hill	Do.	
Vidalia	Concordia Parish Training School for Negroes.	E. H. Green	Do	
Winnsboro	Franklin Parish Training School for Negroes.	J. S. Hunter	Do.	
MISSISSIPPI.				
Aberdeen	State Summer Normal School	L. B. Reid	July 11	Aug. 13
Ackerman	State Summer Normal School (colored).	Luther H. Braswell	July 18	Aug. 20
Benton	State Summer Normal School	T. H. Stanley		
Charleston	State Summer Normal School (colored).	W. E. Johnston	July 15	Aug. 3
Clarksdale	do	P. F. Williams	Aug. 8	Sept. 9
Cleveland	do	J. C. Windham	July 18	
Columbus	do	E. A. Stanley	do	Aug. 3
Corinth	State Summer Normal School	M. E. Moffit	July 11	Aug. 13
Greenville	State Summer Normal School (colored).	A. L. Stephens	July 18	Aug. 13
Grenada	do	H. B. Buckingham	July 8	
Hattiesburg	do	Carl Strahan	June 13	July 13
Hazelton	do	J. Q. Martin	July 18	Aug. 13
Holly Springs	do		Aug. 1	Sept. 3
Indianola	do	G. B. Sanders	July 18	Aug. 20
Ittabena	do	C. F. Capps	do	Aug. 19
Jackson	do	E. E. Long	July 11	Aug. 13
Lamar	State Summer Normal School	J. M. Cousley	May 23	June 25
Lexington	State Summer Normal School (colored).	D. W. Ambrose	June 27	July 31
Meadville	State Summer Normal School	E. J. Green	May 30	July 2
Mendenhall	do	W. S. Huddleston		
Meridian	State Summer Normal School (colored).	W. P. Still	June 6	July 8
Mize	State Summer Normal School	S. H. McDonnieal		
Natchez	State Summer Normal School (colored).	H. B. Bloutwell	June 6	July 15
New Albany	do	B. L. Coulter	July 11	Aug. 13
Oxford	State Summer Normal School	M. P. Bush	do	Do.
Port Gibson	State Summer Normal School (colored).	C. A. McAmis	June 13	July 13
Senatobia	do	J. N. Brinson	July 4	Aug. 4
Summit	do	J. M. Kenna	July 11	Aug. 13
NEW JERSEY.				
Collingswood	State Summer School	C. A. Philhower	June 26	July 29
Newton	do	Amos H. Flake	do	Do.
Ocean City	do	James M. Stevens	do	Do.
TEXAS.				
Alpine	State Summer Normal School	A. W. Evans	June 13	
Athens	do	J. J. Montgomery	do	
Ballinger	do	John J. Bugg	do	
Belton	do	J. H. Head	do	
Brownwood	do	J. H. Hughes	do	
Corpus Christi	do	C. W. Grisson	June 6	
El Paso	do	A. H. Hughey	do	
Marshall	do	W. F. Garner	June 13	
Normangee	do	J. H. Wright	do	
Palacios	do	N. A. Miller	June 20	
San Antonio	do	P. H. Underwood	do	
VIRGINIA.				
Danville	Summer Institute for Colored Teachers.	M. C. Allen	July 1	July 31
Roanoke	do	W. F. Grasty	do	Do.

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XVI.—Directors of Summer Schools—Continued.

IV. Y. M. C. A. and Y. W. C. A. summer schools and camps.

Location.	Summer School.	Director in 1921.	Probable date of session in 1922.	
			Opening.	Closing.
Atascadero, Calif.	Pacific Summer School	F. A. Jackson	July 21	Aug. 4
Hartford, Conn.	Hillyer Institute	Roy M. Van Fleet	July 1	Aug. 10
Washington, D. C.	Vacation School for Boys	Mark De Grange	June 26	Do.
Chicago, Ill.	Central Preparatory School	H. C. Daines	June 1	Sept. 1
Do.	Division Street Department of Y. M. C. A.	G. H. Cottrell	June 24	Aug. 14
Do.	Wilson Avenue Y. M. C. A. School	Luther Smith	June 28	Aug. 20
Baltimore, Md.	Association Institute	A. W. Richeson	June 15	Sept. 1
Boston, Mass.	Huntington School	Charles H. Sampson	June 26	Sept. 8
Somerville, Mass.	Y. M. C. A. Summer School	E. G. Blanchard	July 5	Aug. 16
Springfield, Mass.	Y. M. C. A. College	Elmer Berry	June 26	July 29
Detroit, Mich.	Detroit Institute of Technology	T. Paul Hickey	June 19	Aug. 11
Brooklyn, N. Y.	Bedford Branch of the Y. M. C. A. Educational Institute.	Charles E. Conway	July 5	Aug. 18
Do.	Marquand Summer School	Carroll N. Gibney	...do...	Aug. 11
Blue Ridge, N. C.	Southern College	W. D. Weatherford	June 14	Aug. 30
Philadelphia, Pa.	Vacation School	A. G. Bugbee	June 27	Aug. 5
Scranton, Pa.	Y. M. C. A. School	W. L. Betts	July 5	Aug. 10
Providence, R. I.	Providence Y. M. C. A. School	Fred W. Ummer	...do...	Aug. 28
Houston, Tex.	Y. M. C. A. Summer School for Boys	C. K. Standish	May 22	July 1

V. Summer schools for teachers of exceptional classes.

Northampton, Mass.	Clarke School for the Deaf	(No summer school, 1921.)		
Faribault, Minn.	Minnesota School for Feeble Minded and Colony for Epileptics.	G. C. Hanna	July 1	Aug. 15
St. Louis, Mo.	Central Institute for the Deaf	Julia M. Connery	June 19	July 19
Vineland, N. J.	Summer School for Teachers of Backward or Mentally Deficient Children.	E. R. Johnstone	July 15	Aug. 20
Rome, N. Y.	Rome State School	Charles Bernstein	July 1	July 31

XVII.—Educational Boards and Foundations.

Name of board.	President.	Secretary.	Meeting.
American Field Service Fellowships for French Universities.	Paul D. Cravath, 52 William St., New York, N. Y.	Dr. I. L. Kandel, 522 5th Ave., New York, N. Y.	
American Foundation for the Blind.	H. Randolph Latimer, Pittsburgh, Pa.	.....	
American-Scandinavian Foundation.	Hamilton Holt, 311 6th Ave., New York, N. Y.	Henry G. Leach, 25 West 45th St., New York, N. Y.	New York, N. Y., November 5, 1921.
Anna T. Jeanes Fund.	James H. Dillard, Charlottesville, Va.	John T. Emlen, 328 Chestnut St., Philadelphia, Pa.	New York, N. Y., June, 1922.
Baron de Hirsch Fund.	Eugene S. Benjamin, 130 E. 25th St., New York, N. Y.	Max J. Kohler, 253 Broadway, New York, N. Y.	New York, N. Y.
Carnegie Corporation of New York.	Henry S. Pritchett (acting), 522 5th Ave., New York, N. Y.	James Bertram, 522 5th Ave., New York, N. Y.	New York, N. Y., November 16, 1922.
Carnegie Foundation for the Advancement of Teaching.	Henry S. Pritchett, 522 5th Ave., New York, N. Y.	Clyde Furst, 522 5th Ave., New York, N. Y.	New York, N. Y., November 16, 1921.
Character Education Institution.	Milton Fairchild, 3770 McKinley St., Washington, D. C.	.....	
Commission for Relief in Belgium Educational Foundation.	Herbert Hoover, 42 Broadway, New York, N. Y.	George B. Baker, 42 Broadway, New York, N. Y.	New York, N. Y., December, 1921.
Commonwealth Fund, Educational Research Committee.	Max Farrand, Yale University, New Haven, Conn.	Samuel P. Capen, 618 Connecticut Ave., Washington, D. C.	New York, N. Y.

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XVII.—Educational Boards and Foundations—Continued.

Name of board.	President.	Secretary.	Meeting.
David W. Gerard Memorial-Educational Aid Foundation.	Chas. H. Brough, Little Rock, Ark.	Gilbert Howell, Crawfordsville, Ind.	
Fairhope Educational Foundation.	Mrs. Charles D. Lanier, Greenwich, Conn.	Miss E. E. Langley, Edgewood School, Greenwich, Conn.	New York, N. Y.
General Education Board.	Wallace Buttrick, 61 Broadway, New York, N. Y.	Abraham Flexner and Trevor Arnett, 61 Broadway, New York, N. Y.	
Henry C. Frick, Educational Commission.	W. Lucien Scaife, Granite Building, Pittsburgh, Pa.	George W. Gerwig, Fulton Building, Pittsburgh, Pa.	
John F. Slater Fund.....	James H. Dillard, Box 418, Charlottesville, Va.	Gertrude C. Mann, Box 418, Charlottesville, Va.	New York, N. Y., December, 1921.
Julius Rosenwald Fund..	Julius Rosenwald, Chicago, Ill.	Francis W. Shepardson, Chicago, Ill.	Chicago, Ill.
Kahn Foundation for the Foreign Travel of American Teachers.	Edward D. Adams, 71 Broadway, New York, N. Y.	Frank D. Fackenthal, Substation 84, New York, N. Y.	
Peabody Foundation for International Education Correspondence.	Mrs. Mary G. Howard, Lookout Mountain, Tenn.	Mrs. F. L. Underwood, 124 Morningside, Ferger Place, Chattanooga, Tenn.	
Phelps-Stokes Fund.....	I. N. Phelps-Stokes, 100 William St., New York, N. Y.	Anson Phelps-Stokes, Lenox, Mass.	New York, N. Y., November 16, 1922.
Rockefeller Foundation...	George E. Vincent, Lake Ave. and Parsonage Rd., Greenwich, Conn.	Edwin R. Embree, 47 Pierrepont St., Brooklyn, N. Y.	New York, N. Y., November 30, 1921.
Russell Sage Foundation.	Robert W. de Forest, 30 Broad St., New York, N. Y.	John M. Glenn, 130 East 22d St., New York, N. Y.	

XVIII.—Church Educational Boards and Societies.

The following list shows, first, the name of the organization: second, the name and address of the president; third, the name and address of the secretary; fourth, the place and date of the next meeting.

Council of Church Boards of Education in the United States: Rev. Paul Micon, 289 Fourth Avenue, New York, N. Y.; Robert L. Kelly, 111 Fifth Avenue, New York, N. Y.; Chicago, Ill., January 3-5, 1922.

American Christian Convention, Department of Education: Rev. W. T. Walters, 1615 Garland Avenue, Richmond, Va.; Rev. W. G. Sargent, 138 Lenox Avenue, Providence, R. I.; Burlington, N. C., November, 1922.

Church of the Brethren, General Educational Board: D. W. Kurtz, McPherson, Kans.; J. S. Noffsinger, 358 Sixtieth Street, Brooklyn, N. Y., Elgin, Ill., March 8, 1922.

Church of the United Brethren in Christ, Board of Education: Rev. C. J. Kephart, 3936 Harrison Avenue, Kansas City, Mo.; William E. Schell, U. B. Building, Dayton, Ohio; Dayton, Ohio, May, 1922.

Congregational Education Society: Rev. Charles R. Brown, Yale School of Religion, New Haven, Conn.; F. M. Sheldon, 14 Beacon Street, Boston, Mass.; June, 1922.

Disciples of Christ, Board of Education: A. D. Harmon, Cotner College, Bethany, Nebr.; H. O. Pritchard, 222 Downey Avenue, Indianapolis, Ind.; Chicago, Ill., January 12, 1922.

Mennonites of North America, General Conference, Board of Education: S. K. Mosiman, Bluffton, Ohio; J. H. Langenwalter, Newton, Kans.

Methodist Episcopal Church, Board of Education: Rev. William F. McDowell, Washington, D. C.; A. W. Harris, 150 Fifth Avenue, New York, N. Y.; New York, N. Y., December 6, 1921.

Methodist Episcopal Church South, Board of Education: Rev. W. B. Murrah, Memphis, Tenn.; Stonewall Anderson, Nashville, Tenn.

Methodist Protestant Church, Board of Education: J. W. Knott, New Brighton, Pa.; Rev. George H. Miller, 613 West Diamond Street, N. S., Pittsburgh, Pa.; Pittsburgh, Pa., May 18, 1922.

Northern Baptist Convention, Board of Education: Ernest D. Burton, 5725 Woodlawn Avenue, Chicago, Ill.; Frank W. Padelford, 276 Fifth Avenue, New York, N. Y.

Presbyterian Church in the United States of America, General Board of Education: Rev. Hugh T. Kerr, 827 Anderson Avenue, Pittsburgh, Pa.; Rev. Edgar P. Hill, 156 Fifth Avenue, New York, N. Y.; New York, N. Y., April 26, 1922.

Presbyterian Church in the United States (Southern), Executive Committee of Education: Henry H. Sweets, 410 Urban Building, Louisville, Ky.; D. S. Gage, 410 Urban Building, Louisville, Ky.; Montreal, N. C., July, 1922.

Protestant Episcopal Church, Department of Religious Education: Rt. Rev. T. F. Gailor, 281 Fourth Avenue, New York, N. Y.; Rev. William E. Gardner, 289 Fourth Avenue, New York, N. Y.; New York, N. Y., October, 1921.

Reformed Church in America, Board of Education: Rev. A. T. Broek, 427 Halsey Street, Newark, N. J.; Rev. Willard D. Brown, 25 East 22d Street, New York, N. Y.; New York, N. Y., September 27, 1921.

Seventh-Day Adventists, Department of Education: Secretary, W. E. Howell, Takoma Park, Washington, D. C.

Seventh-Day Baptist Education Society: Rev. William C. Whitford, Alfred, N. Y.; Earl P. Saunders, Alfred, N. Y.; Alfred, N. Y., September 13, 1922.

Society of Friends, 5-Years' Meeting, Board of Education: David M. Edwards, Earlham College, Richmond, Ind.; J. Edwin Jay, Wilmington College, Wilmington, Ohio.

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Society of Friends, General Conference: Committee on Education: Thomas A. Jenkins, 5411 Greenwood Avenue, Chicago, Ill.; Mrs. Ida P. Stabler, 154 North Fifteenth Street, Philadelphia, Pa.; Cape May, N. J., July, 1922.
Southern Baptist Convention, Education Board: Frank S. White, Sr., 1407 Jefferson County Building, Birmingham, Ala.; W. C. James, Jefferson County Building, Birmingham, Ala.; Birmingham, Ala., May, 1922.
United Lutheran Church in America, Board of Education: Rev. A. J. Turkle, Stockton Avenue and Arch Street, Pittsburgh, Pa.; Rev. F. G. Gotwald, York, Pa.; Washington, D. C., December, 1921.
United Presbyterian Church, Board of Education: David F. Matchet, 6133 Ellis Avenue, Chicago, Ill. J. E. Bradford, 1344 East Sixty-Third Street, Chicago, Ill.; Chicago, Ill., December, 1921.

XIX.—Jewish Educational Organizations.

The following list shows, first, the name of the association; second, the name and address of the president; third, the name and address of the secretary; fourth, the place and date of the next meeting.

1. *National.*

Central Conference of American Rabbis, Religious Education Committee: Council of Jewish Women: Mrs. Enoch Rauh, 5837 Bartlett Street, Pittsburgh, Pa.; Mrs. Leon G. Ball, 6725 McPherson Boulevard, Pittsburgh, Pa.; Pittsburgh, Pa., October, 1921.
Educational League for the Higher Education of Orphans: Alfred A. Benesch, Society for Savings Building, Cleveland, Ohio; Eugene E. Wolf, 336 Engineers Building, Cleveland, Ohio; Cleveland, Ohio, probably September, 1921.
Jewish Chautauqua Society: Arthur K. Stern, 428 North Third Street, Philadelphia, Pa.; Jeannette M. Goldberg, 1305 Stephen Girard Building, Philadelphia, Pa.; Dallas, Texas, December 25–30, 1921.
Union of American Hebrew Congregations, Board of Managers of Synagogue and School Extension: Charles Shohl, 1314 First National Bank, Cincinnati, Ohio; George Zepin, 62 Dutton Hufer Building, Cincinnati, Ohio; New York, N. Y., January 16-18, 1923.

2. *City.*

Bureau of Education of the Jewish Community of New York City: Judah L. Magnes, 114 Fifth Avenue; Samson Benderly, 114 Fifth Avenue.
Educational Alliance (New York City): Samuel Greenbaum, 27 Madison Avenue; Bernard M. L. Ernst, 25 West 43d Street.
Hebrew Education Society (Newark, N. J.): Moses Roth, 366 Grove Road, South Orange; Samuel Roessler, 174 Littleton Avenue.
Hebrew Education Society of Philadelphia (Pa.): Clarence L. Marks, 146 North Thirteenth Street; Bernard Harris, 609–610 Stephen Girard Building.
Jewish Community Center: Maurice Weil, 14th and Locust Streets; Walter Marx, 11th and Washington Streets.

XX.—Superintendents of Catholic Parochial Schools.

[Archdioceses are indicated by an asterisk (*).]

Diocese or archdiocese.	Name and title of supervising officer.	Address.
Albany, N. Y.	Rev. Joseph A. Dunney, inspector of schools.	454 Western Ave., Albany, N. Y.
Baker City, Oreg.	Rev. Hugh J. Marshall, diocesan inspector of schools.	Klamath Falls, Oreg.
*Baltimore, Md.	Rev. Lawrence A. Brown, superintendent (Baltimore City).	Catonsville, Baltimore, Md.
*Boston, Mass.	Rev. Augustine F. Hickey, diocesan supervisor of schools.	75 Union Park St., Boston, Mass.
Brooklyn, N. Y.	Rev. Joseph V. S. McClancy, inspector of schools.	749 Linwood St., Brooklyn, N.Y.
Buffalo, N. Y.	Rev. Francis T. Kanaley, superintendent of parochial schools.	1974 Seneca St., Buffalo, N. Y.
Chicago, Ill.	Rev. John Ford, superintendent of schools.	1648 West Grand Ave., Chicago, Ill.
*Cincinnati, Ohio.	Rev. William Schmitt, superintendent of parochial schools.	734 Hawthorne St., Cincinnati, Ohio.
Cleveland, Ohio.	Rev. William A. Kane, diocesan superintendent of parochial schools.	1027 Superior Ave. NE., Cleveland, Ohio.
Columbus, Ohio.	Rev. John J. Murphy, superintendent of schools.	414 North Broadway, Columbus, Ohio.
Crookston, Minn.	Rev. Thomas G. Merrill, diocesan superintendent of schools.	Red Lake Falls, Minn.
Erie, Pa.	Rev. Joseph Wehrle, superintendent of schools.	Erie, Pa.
Fall River, Mass.	Rev. Francis J. Bradley, diocesan school supervisor.	274 2d St., Fall River, Mass.
	Rev. L. Damase Robert, diocesan school supervisor.	889 Pine St., Fall River, Mass.
Fargo, N. Dak.	Rev. John Baker, inspector of schools.	Valley City, N. Dak.
Fort Wayne, Ind.	Rev. A. E. Lafontaine, superintendent of schools.	1140 Clinton St., Fort Wayne, Ind.
Galveston, Tex.	Rev. J. B. O'Leary, diocesan director of schools.	Tenth and Harvard Sts., Houston, Tex.
Grand Rapids, Mich.	Rev. James D. Kenny, diocesan superintendent of schools.	733 Bridge St., Grand Rapids, Mich.
Hartford, Conn.	Rev. Edwin A. Flynn, superintendent of schools.	St. Marys Home, Hartford, Conn.

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XX.—Superintendents of Catholic Parochial Schools—Continued.

Diocese or archdiocese.	Name and title of supervising officer.	Address.
Helena, Mont	Rev. John J. Tracy, diocesan superintendent of schools.	Mt. St. Charles College, Helena, Mont.
Lafayette, La	Rev. Anthony F. Isenberg, superintendent of schools.	Crowley, La.
Little Rock, Ark	Rev. Herbert A. Heagney, superintendent	Pulaski Heights, Little Rock, Ark.
Manchester, N. H	Rev. Wilfrid J. Lessard, superintendent of schools.	86 Arlington St., Manchester, N. H.
Nashville, Tenn	Rev. S. A. Stritch, supervisor of diocesan schools.	2001 West End Ave., Nashville, Tenn.
*New Orleans, La	Rev. F. X. Twellmeyer, S. J., superintendent	6363 St. Charles Ave., New Orleans, La.
*New York, N. Y	Rev. Joseph F. Smith, superintendent of schools.	328 West 14th St., New York, N. Y.
	Rev. Edward J. Flynn, superintendent of schools (Westchester County).	
*New York, N. Y	Rev. John P. McClancy, superintendent of schools (Orange and Rockland Counties).	
	Rev. John J. Hickey, superintendent of schools (Ulster and Sullivan Counties).	
	Rev. Joseph F. Sheahan, superintendent of schools (Putnam and Dutchess Counties).	
Newark, N. J	Rev. John A. Dillon, superintendent of schools.	891 Washington St., Newark, N. J.
	Rev. William F. Lawlor, assistant superintendent of schools.	691 Westside Ave., Jersey City, N. J.
Omaha, Nebr	Rev. J. Ruesing, inspector of schools	Westpoint, Nebr.
*Oregon City, Oreg	Rev. Edwin V. O'Hara, diocesan superintendent of school.	Eugene, Oreg.
*Philadelphia, Pa	Rev. John E. Flood, superintendent of parochial schools.	242 South 20th St., Philadelphia, Pa.
	Rev. Joseph M. O'Hara, assistant superintendent of parochial schools.	1429 North 11th St., Philadelphia, Pa.
Pittsburgh, Pa	Rev. Ralph L. Hayes, superintendent of schools.	116 North Dithridge St., Pittsburgh, Pa.
Rochester, N. Y	Rev. Joseph S. Cameron, superintendent of schools.	Bath, N. Y.
*St. Louis, Mo	Rev. James P. Murray, superintendent of parish schools.	2122 South 12th St., St. Louis, Mo.
	Rev. P. J. Ritchie, superintendent of high schools.	1414 O'Fallon St., St. Louis, Mo.
San Antonio, Calif	Rev. J. Weckesser, school superintendent	St. Mary's College, San Antonio, Tex.
*San Francisco, Calif	Rev. Ralph Hunt, superintendent of schools.	Y. M. I. Building, Oak St., San Francisco, Calif.
Scranton, Pa	Rev. J. A. Boyle, superintendent of schools	1427 College Ave., Scranton, Pa.
Springfield, Mass	Rev. John F. Conlin, diocesan school visitor.	Chicopee, Mass.
	Rev. P. F. Doyle, assistant diocesan school visitor.	Brookfield, Mass.
Syracuse, N. Y	Rev. Charles F. McEvoy, superintendent of schools.	259 East Onondaga St., Syracuse, N. Y.
Toledo, Ohio	Rev. Francis MacElwane, diocesan superintendent of parochial schools.	2533 Collingwood Ave., Toledo, Ohio.
Trenton, N. J	Rev. Patrick J. Clune, superintendent of parochial schools.	43 Manning Ave., North Plainfield, N. J.

XXI.—Directors of Schools for Social Workers.

Location.	Name of institution.	Director.
Washington, D. C	National Service School for Women	Chas. P. Neill.
Chicago, Ill	School of Social Service (University of Chicago)	L. C. Marshall.
New Orleans, La	School of Social Service (Newcomb College, Tulane University).	R. J. Colbert.
Boston, Mass	School of Social Work (Simmons College)	Stuart A. Queen.
St. Louis, Mo	Missouri School of Social Economy	Geo. B. Mangold.
New York, N. Y	New York School of Social Work	Porter R. Lee.
Chapel Hill, N. C	School of Public Welfare (University of North Carolina)	Howard W. Odum.
Cleveland, Ohio	School of Applied Social Sciences (Western Reserve University).	James E. Cutler.
Philadelphia, Pa	Pennsylvania School for Social Service	Joseph K. Hart.
Richmond, Va	School of Social Work and Public Health	J. J. Scherer, jr.

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XXII.—International Associations of Education.

The following list shows, first, the name of the association; second, the name and address of the president; third, the name and address of the secretary; fourth, the place and date of the next meeting:

American Congress on Economic Expansion and Commercial Education: Pablo Fontaina, Montevideo, Uruguay; Eduardo Vásquez, Montevideo, Uruguay; Rio Janeiro, Brazil, 1922.
American University Union in Europe: H. P. Judson, University of Chicago; Chicago, Ill.; J. W. Cunliffe, Columbia University, New York, N. Y.
International Association of Teachers of Printing: Harry J. Burns, 22 Grant Street, Newark, N. J.; Lester I. Dygert, P. O. Box 1, Springfield, Mass.
Institute of International Education: Stephen P. Duggan, 419 West One hundred and seventeenth Street, New York, N. Y.; Miss Mary L. Waite, 419 West One hundred and seventeenth Street, New York, N. Y.
International Commission on the Teaching of Mathematics: G. Klein, Göttingen, Germany; H. Fehr, Geneva, Switzerland.
International Federation of Catholic Alumnæ: Mrs. John M. Enery, 2005 Seventh Avenue, Moline, Ill.; Florence A. Colford, 1512 H Street NW., Washington, D. C.; Louisville, Ky., October, 1922.
International Federation of University Women: Caroline F. E. Spurgeon, Bedford College, London, England; Theodora Bosanquet, 66 Avenue Chambers, Vernon Place, London, W. C., England; Paris, July, 1922.
International Sunday School Association: W. O. Thompson, Ohio State University, Columbus, Ohio; Herbert L. Hill, 150 Fifth Avenue, New York, N. Y.; Philadelphia, July 13, 1921.
International Kindergarten Union: Luella A. Palmer, 510 West One hundred and twenty-third Street, New York, N. Y.; May Murray, 40 High Street, Springfield, Mass.; Louisville, Ky., last of April, 1922.
International Sunday School Association: William O. Thompson, Ohio State University, Columbus, Ohio; Marion Lawrance, 1516 Mallers Building, Chicago, Ill.; Kansas City, Mo., June, 1922.
Union Académique Internationale: E. C. Armstrong, Princeton, N. J.; John Erskine, Columbia University, New York, N. Y.
Union des Associations Internationales: Cooreman, 161 Avenue Louise, Brussels, Belgium; Paul Otlet, Palais Mondial, Brussels, Belgium; Brussels, August 23, 1921.
World's Student Christian Federation: John R. Mott, 342 Madison Avenue, New York, N.Y.; Ruth Rouse, 28 Lancaster Road, Wimbledon London, SW., England: Peking, China, April, 1922.

XXIII.—American Educational Associations.

The following list shows, first, the name and address of the association; second, the name and address of the president; third, the name and address of the secretary; fourth, the place and date of the next meeting.

1. *National and sectional.*

Alumni Association of American Rhodes Scholars: Leonard W. Cronkhite, 142 Berkeley Street, Boston, Mass.; Frank Aydelotte, Swarthmore College, Swarthmore, Pa.
American Association for the Advancement of Agricultural Teaching: Aretas W. Nolan, Urbana, Ill.; C. D. Jarvis, Grimsby, Ontario, Canada.
American Association for the Advancement of Science, Section S: G. M. Whipple, Ann Arbor, Mich.; B. T. Baldwin, University of Iowa, Iowa City, Iowa; Toronto, Canada, December 27-30, 1921.
American Association for the Study of the Feeble Minded: Joseph Ladd, Exeter School, Slocum, R. I.; Benjamin W. Baker, School for Feeble Minded, Laconia, N. H.
American Association of Agricultural College Editors: Carl R. Woodward, New Brunswick, N. J.; M. V. Atwood, Cornell University, Ithaca, N. Y.; Blacksburg, Va.
American Association of College News Bureaus: Bristow Adams, Cornell University, Ithaca, N. Y.; Joseph F. Wright, University of Illinois, Urbana, Ill.; St. Louis or Chicago, Christmas Holidays, 1921.
American Association of Collegiate Registrars: A. G. Hall, University of Michigan, Ann Arbor, Mich.; Raymond Walters, Lehigh University, Bethlehem, Pa.
American Association of Farmers' Institute Workers: J. W. Neill, Austin, Tex.; Wesley Webb, Dover, Del.
American Association of Instructors of the Blind: Edward M. Van Cleve, Thirty-fourth Street and Ninth Avenue, New York, N. Y.; C. A. Hamilton, Batavia, N. Y.; June, 1922.
American Association of Junior Colleges: G. F. Winfield, Greenville, Tex.; Martha M. Read, Fulton, Mo.; Memphis, Tenn.
American Association of Teachers Colleges: David Felmley, Normal, Ill.; J. G. Crabbe, Greeley, Colo.
American Association of Teachers of Journalism: Willard Bleyer, University of Wisconsin, Madison, Wis.; Prof. Crawford, Kansas State Agricultural College, Manhattan, Kans.; Madison, Wis., December 27-29, 1921.
American Association of Teachers of Spanish: J. D. Fitzgerald, Urbana, Ill.; Alfred Coester, Stanford University, Calif.; December 27, 1921.
American Association of University Professors: E. R. A. Seligman, 324 West Eighty-sixth Street, New York, N. Y.; H. W. Tyler, 222 Charles River Road, Cambridge, Mass.; Pittsburgh, Pa., December 30-31, 1921.
American Association of University Women: Ada Comstock, Smith College, Northampton, Mass.; Mrs. Gertrude S. Martin, 934 Stewart Avenue, Ithaca, N. Y.; Kansas City, Mo.; March or April, 1922.
American Association to Promote the Teaching of Speech to the Deaf: Harris Taylor, 904 Lexington Avenue, New York, N. Y.; H. M. McManaway, Staunton, Va.
American Bar Association, Section of Legal Education: Elihu Root, 31 Nassau Street, New York, N. Y.; John B. Sanborn, Gay Building, Madison, Wis.
American Classical League: Andrew F. West, Princeton, N. J.; Shirley H. Weber, Princeton, N. J.; June or July, 1922.
American Conference of Pharmaceutical Faculties: Clare A. Dye, Columbus, Ohio; Theodore J. Bradley, 179 Longwood Avenue, Boston, Mass.; Cleveland, Ohio, August, 1922.
American Council of Learned Societies devoted to Humanistic Studies: Charles H. Haskins, Harvard University, Cambridge, Mass.; John Erskine, Columbia University, New York, N. Y.; New York, N. Y., October, 1921.
American Council of Education: David Kinley, University of Illinois, Urbana, Ill.; Virginia C. Gildersleeve, Barnard College, New York, N. Y.; May 5, 1922.
American Federation of Arts: Robert W. de Forest, 30 Broad Street, New York, N. Y.; Miss Leila Mechlin, 1741 New York Avenue, Washington, D. C.; Probably Washington, D. C., May, 1922.

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American Federation of Teachers: Charles B. Stillman, 1620 Lake Avenue, Wilmette, Ill.; F. G. Stecker, 1618 Lake Avenue, Wilmette, Ill.; December, 1921.

American Federation of Teachers of the Mathematical and the Natural Sciences: C. R. Mann, 1505 Emerson Street NW., Washington, D. C.; William A. Hedrick, Central High School, Washington, D. C.; Toronto, Canada, December 28, 1921.

American Home Economics Association: Mary E. Sweeney, Michigan Agricultural College, East Lansing, Mich.; Lenna F. Cooper, School of Home Economics, Battle Creek, Mich.; Corvallis, Oreg., July 3–8, 1922.

American Humane Education Society: Francis H. Rowley, 180 Longwood Avenue, Boston, Mass.; Guy Richardson, 180 Longwood Avenue, Boston, Mass.; Boston, Mass., March, 1922.

American Institute of Dental Teachers: G. S. Millberry, University of California, San Francisco, Calif; Abram Hoffman, 381 Linwood Avenue, Buffalo, N. Y.; Montreal, Quebec, Canada, January 22–28, 1922.

American Medical Association, Council on Medical Education and Hospitals: Arthur D. Bevan, Chicago, Ill.; Nathan P. Colwell, 535 North Dearborn Street, Chicago, Ill.; Chicago, Ill., March 6–9, 1922.

American Nature-Study Society: J. Andrew Drushel, Harris Teachers College, St. Louis, Mo.; Anna B. Comstock, Cornell University, Ithaca, N. Y.

American Physical Education Association: Dudley B. Reed, University of Chicago, Chicago, Ill.; J. H McCurdy, Box 123, Highland Station, Springfield, Mass.; Detroit, Mich., 1922.

American Posture League: Jessie H. Bancroft, 164 Sterling Place, Brooklyn, N. Y.; Henry L. Taylor, 125 West Fifty-eighth Street, New York, N. Y.; New York, N. Y., March, 1922.

American School Citizenship League: Randall J. Condon, Cincinnati, Ohio; Fannie F. Andrews, 405 Marlborough Street, Boston 17, Mass.; with the National Education Association, July, 1922.

American School Hygiene Association, William A. Howe, Albany, N. Y.; Harry B. Burns, 110 Fulton Building, Pittsburgh, Pa.; New York, N. Y., November 16–18, 1921.

American Society for the Extension of University Teaching: Roland S. Morris, 1617 Land Title Building, Philadelphia, Pa.; William K. Huff, Academy of Music, Philadelphia, Pa.; Academy of Music, Philadelphia, Pa.

Army Educational Corps: Frank E. Spaulding, Yale University, New Haven, Conn.; George F. James, 210 Mallors Building, Chicago, Ill.; with the Department of Superintendence, National Education Association, February, 1922.

Associated Harvard Clubs: E. M. Grossman, 820 Rialto Building, St. Louis, Mo.; George A. Morison, South Milwaukee, Wis.; Boston, Mass., June, 1922.

Association of Alumni Secretaries: Walter R. Okeson, Lehigh University, Bethlehem, Pa.; J. L. Morrill, Ohio Union, Columbus, Ohio; April or May, 1922.

Association of American Colleges: Clark W. Chamberlain, Denison University, Granville, Ohio; Raymond M. Hughes, Miami University, Oxford, Ohio; Chicago, Ill., January, 1922.

Association of American Law Schools: Arthur L. Corbin, Yale Law School, New Haven, Conn.; Henry C. Jones, University of Illinois, Urbana, Ill.; Chicago, Ill., December 29–31, 1921.

Association of American Library Schools: P. L. Windsor, University of Illinois Library Schools, Urbana, Ill.; Margaret Williams, New York State Library School, Albany, N. Y.; July 7, 1921.

Association of American Medical Colleges: Theodore Hough, Charlottesville, Va.; Fred C. Zapffe, 3421 Lexington Street, Chicago, Ill.; March 6–9, 1922.

Association of American Universities: E. R. Lindley, University of Kansas, Manhattan, Kans.; David A. Robertson, University of Chicago, Chicago, Ill.; Columbia, Mo., November, 1921.

Association of Biblican Instructors in American Colleges and Secondary Schools: Charles F. Kent, Yale University, New Haven, Conn.; T. R. Hyde, Hill School, Pottstown, Pa.; New York, N. Y., last week in December, 1921.

Association of Business Officers of the Universities and Colleges of the Middle West: Lloyd Morey, University of Illinois, Urbana, Ill.; W. H. Bates, University of Iowa, Iowa City, Iowa; May, 1922.

Association of Church Directors of Religious Education: George S. Yaple, Blaine Avenue, Detroit, Mich.; Mary Lawrence, Islington Road, Auburndale, Mass.; Toronto, Canada, probably March, 1922.

Association of Colleges and Preparatory Schools of the Middle States and Maryland: William M. Irvine, Mercerburg Academy, Mercerburg, Pa.; George W. McClelland, University of Pennsylvania, Philadelphia, Pa.; Swarthmore College, Friday and Saturday following Thanksgiving, 1921.

Association of Colleges and Secondary Schools of the Southern States: J. H. Kirkland, Vanderbilt University, Nashville, Tenn.; Edward A. Bechtel, Tulane University, New Orleans, La.; Birmingham, Ala., December 1-2, 1921.

Association of Colleges for Negro Youth: J. L. Peacock, Shaw University, Raleigh, N. C.; J. T. Cater, Talladega College, Talladega, Ala.; Wilberforce University, Ohio, November, 1921.

Association of Collegiate Schools of Architecture: Emil Lorch, University of Michigan, Ann Arbor, Mich.; Clarence A. Martin, Cornell University, Ithaca, N. Y.

Association of Collegiate Schools of Business: Emory R. Johnson, University of Pennsylvania, Philadelphia, Pa.; Morton A. Aldrich, Tulane University, New Orleans, La.; Philadelphia, May, 1922.

Association of Directors of Physical Education for Women: Katharine Sibley, Syracuse University, Syracuse, N. Y.; Alice Belden, Randolph-Macon College, Lynchburg, Va.; Bryn Mawr, Pa., April, 1922.

Associations of Friends' Schools: John Carver, Friends' School, New York, N. Y.; Murtis B. Muschamp, Seventeenth Street and Girard Avenue, Philadelphia, Pa.

Association of History Teachers of the Middle States and Maryland: Albert K. Heckel, Lafayette College, Easton, Pa.; Nellie P. Ferry, 4818 Warrington Avenue, Philadelhpia, Pa.

Association of Institutions giving Normal Instruction in Physical Education: C. Ward Crampton, 18 East Seventy-eighth Street, New York, N. Y.; Mrs. Frances O. Hester, American College of Physical Training, Chicago, Ill.

Association of Junior Colleges: George F. Winfield, Wesley College, Greenville, Tex.; Martha MacKenzie Reid, William Woods College, Fulton, Mo.; Memphis, Tenn., February 25, 1922.

Association of Land Grant Colleges: R. A. Pearson, Iowa State College, Ames, Iowa; J. L. Hills, University of Vermont, Burlington, Vt.; New Orleans, La., November 8–10, 1921.

Association of Military Colleges and Schools: E. W. Nichols, Lexington, Va.; Col. R. P. Davidson, Lake Geneva, Wis.; Washington, D. C., 1921.

Association of Modern Language Teachers of the Central West and South: A. R. Hohlfeld, Madison, Wis.; C. H. Handschin, 109 South Poplar Street, Oxford, Ohio; Chicago, Ill., May, 1922.

Association of Modern Language Teachers of the Middle States and Maryland: Anna Woods Ballard, Teachers College, Columbia University, New York, N. Y.; Henry G. Doyle, George Washington University, Washington, D. C.; Swarthmore, Pa., November 26, 1921.

Association of Presidents and Past Presidents of State and National Music Teachers' Association: Harold L. Butler, University of Kansas, Lawrence, Kans.; Walter Spry, 509 South Wabash Avenue, Chicago, Ill.; Detroit, Mich., December 27, 1921.

Association of Schools, Colleges, and Seminaries of the Reformed Church: Henry H. Apple, Lancaster, Pa.; George L. Omwake, Collegeville, Pa.

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Association of Teachers of Mathematics in New England: Walter F. Downey, English High School Annex, Boston, Mass.; Harry D. Gaylord, 448 Audubon Road, Boston, Mass.; Boston, Mass., December 3, 1921.
Association of Teachers of Mathematics in the Middle States and Maryland: W. E. Breckenridge, Stuyvesant High School, New York, N. Y.; C. B. Wahl, Friends' Central School, Philadelphia, Pa.
Association of Urban Universities: Charles S. Howe, Case School of Applied Science, Cleveland, Ohio; Frederick B. Robinson, College of the City of New York; Cleveland, Ohio; November 17–19, 1921.
Bi-State Educational Club: R. H. Jordan, Dartmouth College, Hanover, N. H.; T. E. Bacon, High School, Hanover, N. H.
Catholic Educational Association: T. J. Shahan, Catholic University, Washington, D. C.; F. W. Howard, Columbus, Ohio.
Central Association of Science and Mathematics Teachers: Walter W. Hart, University of Wisconsin, Madison, Wis.; Glen W. Warner, Englewood High School, Chicago, Ill.; St. Louis, Mo., November 25–26, 1921.
Chinese Students' Alliance in the United States of America: M. J. Baul, Johns Hopkins University, Baltimore, Md.; G. C. Chen, University of Chicago, Chicago, Ill.
Classical Association of New England: D. S. Lowell, Roxbury Latin School, Roxbury, Boston, Mass.; M. N. Wetmore, Williamstown, Mass.; April, 1922.
Classical Association of the Atlantic States: Helen H. Tanzen, Hunter College, New York, N. Y.; Charles Knapp, Barnard College, New York, N. Y.
Classical Association of the Middle West and South: Charles H. Weeler, University of Iowa, Iowa City, Iowa; Rollin H. Tanner, Denison University, Granville, Ohio.
Classical Association of the Middle West and South, Southern Branch: George Howe, Chapel Hill, N. C.; E. L. Green, Columbia, S. C.; Atlanta, Ga., probably February, 1922.
Classical Association of the Pacific States, Northern Section: Harold L. Axtell, University of Idaho, Moscow, Idaho; Julianna A. Roller, Franklin High School, Portland, Oreg.; Walla Walla, Wash., November 25–26, 1921.
College Art Association of America: David M. Robinson, Johns Hopkins University, Baltimore, Md.; John Shapley, Brown University, Providence, R. I.
College Conference on English in the Central Atlantic States: E. P. Kuhl, Goucher College, Baltimore, Md.; W. O. Sypherd, University of Delaware, Newark, Del.; Swarthmore, Pa., November 26, 1921.
College Entrance Examination Board: Howard McClenahan, Princeton University, Princeton, N. J.; Thomas S. Fiske, 431 West One hundred and seventeenth Street, New York, N. Y.; New York, N. Y., November 5, 1921.
Committee of Fifteen on Educational Preparation for Foreign Service (with Advisory Council): Glen Levin Swiggett, U. S. Bureau of Education, Washington, D. C.
Committee on Friendly Relations among Foreign Students: Secretary, Charles D. Durrey, 347 Madison Avenue, New York, N. Y.
Conference of Church Workers in Universities: William Houston, 54 Fifteenth Avenue, Columbus, Ohio; Vernon S. Phillips, 176 W. Ninth Avenue, Columbus, Ohio; Chicago, Ill., January, 1922.
Conference of Colleges of the Interior: W. H. Rollins, Wichita, Kans.; E. Lee Howard, Fargo , N. Dak.; Chicago, Ill., January, 1922.
Conference of Superintendents and Principals of Schools for the Deaf in the United States and Canada: Isaac B. Gardner, 99 Fort Washington Avenue, New York, N. Y.; Ignatius Bjorlee, Frederick, Md.
Convention of American Instructors of the Deaf: Percival Hall, Gallaudet College, Washington, D. C.; Ignatius Bjorlee, Frederick, Md.
Corda Fratres Association of Cosmopolitan Clubs: Harold J. Leonard, 515 Syndicate Building, Minneapolis, Minn.; Mrs. M. Frances Pierce, University of Minnesota, Minneapolis, Minn.; Minneapolis, Minn., December 27–29, 1921.
Council on Management Education: Hollis Godfrey, 639 Drexel Building, Philadelphia, Pa., C. L. Eyanson, 639 Drexel Building, Philadelphia, Pa.; Philadelphia, Pa., October 1, 1921.
Drama League of America: John M. Stahl, 3401 South Michigan Avenue, Chicago, Ill.; Alice M. Houston, 1426 Forest Avenue, Evanston, Ill.
Eastern Arts Association: Fred P. Reagle, Montclair, N. J.; Frank E. Mathewson, Dickinson High School, Jersey City, N. J.; Rochester, N. Y., April 6–8, 1922.
Eastern Association of Physics Teachers: Charles E. Stratton, Mechanic Arts High School, Boston, Mass. George A. Cushman, English High School, Boston, Mass.; November, 1921.
Eastern Commercial Teachers Association: D. A. McMillin, Central High School, Newark, N. J.; F. A. Tibbetts, Dickinson High School, Jersey City, N. J.; Trenton, N. J., April 13–15, 1922.
Eastern Music Supervisors' Conference: Harry E. Whittemore, Manchester, N. H.; Pauline A. Meyer, New Britain, Conn.
Educational Aid Society: Harry J. Myers, 122 South Michigan Avenue, Chicago, Ill.; Leila E. Peterson, 3726 Herndon Street, Chicago, Ill.
Educational Association of College Presidents of the Methodist Episcopal Church: A. B. Storms, Berea, Ohio; Robert J. Trevorrow, Hackettstown, N. J.; January, 1922.
Educational Press Association of America: Henry G. Williams, Columbus, Ohio; George L. Towne, 1126 Q Street, Lincoln, Nebr.; with the Department of Superintendence, National Education Association.
Farmers' Educational Cooperative Union: C. S. Barrett, Union City, Ga.; A. C. Davis, Gravette, Ark.; November 15–17, 1921.
Federation for American Childhood: Louis W. Rapeer, 20 Jackson Place, Washington, D. C.; Marjorie Vandewater, 20 Jackson Place, Washington, D. C.; Washington, D. C., June 10, 1922.
Federation for Child Study: Mrs. Howard S. Gans, 260 West Seventy-Sixth Street, New York, N. Y.; Mrs. Jesse W. Ehrich, 393 West End Avenue, New York, N. Y.; November 2, 1921.
Head Masters' Association: Eugene C. Alder, 282 Lafayette Avenue, Brooklyn, N. Y.; William B. Snow, 106 Elm Street, Stoneham, Mass.; New York, N. Y., February 10–11, 1922.
Head Mistress Association of the Middle West: Mrs. Arthur E. Lyman, 9209 Euclid Avenue, Cleveland, Ohio; Mary E. Raymond, 1945 East Ninety-seventh Street, Cleveland, Ohio: Toledo, Ohio, November, 1921.
Inland Empire Council of Teachers of English: Ralph Tieje, State Normal, Cheney, Wash.; Pearle Anderson, The Lewis and Clark High School, Spokane, Wash.; Spokane, Wash., Easter Vacation.
Inland Empire Teachers' Association: D. A. Grout, 405 Court House, Portland, Oreg.; J. A. Burke, Spokane, Wash.; Spokane, Wash., April 5–7, 1922.
Intercollegiate Vocational Guidance Association: Catherine Filene, 1 West Hill Place, Boston, Mass.; Irma E. Voigt, 1 West Hill Place, Boston, Mass.; Columbus, Ohio, November, 1921.
Lake Mohonk Indian Conference: Secretary, H. C. Phillips, Mohonk Lake, N. Y.
Middle West Society of Physical Education and Hygiene: W. J. Monilaw, University of Chicago, Chicago, Ill.; Margaret McKee, Des Moines, Iowa, Des Moines, Iowa, February, 1922.
Missionary Education Movement of the United States and Canada: William P. Schell, 156 Fifth Avenue, New York, N. Y.; Harry S. Myers, 276 Fifth Avenue, New York, N. Y.; January, 1922.

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Mississippi Valley Historical Association: William E. Connelley, Topeka, Kans.; Mrs. C. S. Paine, Lincoln, Nebr.; Iowa City, Iowa, May, 1922.
Missouri Valley Commercial Teachers' Association: E. E. Gard, St. Joseph Business University, St. Joseph, Mo.; Mary Hansen, Central High School, Kansas City, Mo.; Kansas City, Mo., November 25–26, 1921.
Music Supervisors' National Conference: Frank A. Beach, Music Hall, Emporia, Kans.; Ada Bicking, Evansville, Ind.; Nashville, Tenn., March 20–25, 1922.
Music Teachers' National Association: Osbourne McConathy, Northwestern University, Evanston, Ill.; Robert G. McCutchan, De Pauw University, Greencastle, Ind.; Detroit, Mich., December 28–30, 1921.
National Academy of Visual Instruction: F. W. Reynolds, University of Utah, Salt Lake City, Utah; J. V. Ankeney, University of Missouri, Columbia, Mo.
National Associated Schools of Scientific Business: W. N. Ferris, Big Rapids, Mich.; B. S. Travis, Big Rapids, Mich.
National Association for the Study and Education of Exceptional Children: Samuel D. Levy, Children's Court, New York, N. Y.; W. F. Blake-Burke, 543 West Seventh Street, Plainfield, N. J.
National Association of Accredited Commercial Schools: B. F. Williams, Des Moines, Iowa; H. E. V. Porter, Jamestown, N. Y.; St. Louis, Mo., December 27–31, 1921.
National Association of Corporation Training: W. W. Kincaid, Irving Place at Fifteenth Street, New York, N. Y.
National Association of Dental Faculties: William Carr, 302 East Thirty-fifth Street, New York, N. Y.; De Los L. Hill, 612 Grant Boulevard, Atlanta, Ga.; Milwaukee, Wis., August 12–14, 1921.
National Association of Directors of Educational Research: H. O. Bugg, Lincoln School, Columbia University, New York, N. Y.; Ernest J. Ashbaugh, Iowa State University, Iowa City, Iowa; with the Department of Superintendence, National Education Association.
National Association of Directors of Supervised Student Teaching: A. R. Mead, Ohio Wesleyan University, Delaware, Ohio; Robert A. Cummins, University of Southern California, Los Angeles, Calif.; with the National Education Association.
National Association of High School Supervisors and Inspectors: H. A. Hollister, University of Illinois, Urbana, Ill.; J. B. Edmondson, University of Michigan, Ann Arbor, Mich.; Chicago, Ill., with the Department of Superintendence, National Education Association.
National Association of Penmanship Supervisors: C. A. Barnet, Cleveland, Ohio.
National Association of Public School Business Officials: Arthur Kinkade, High School Building, Decatur, Ill.; R. H. Thomas, Portland, Oreg.; May, 1922.
National Association of School Building Officials: C. W. Handman, 511 West Court Street, Cincinnati, Ohio; R. M. Milligan, Board of Education, St. Louis, Mo.
National Association of Secondary School Principals: Merle Prunty, Central High School, Tulsa, Okla.; H. V. Church, J. Sterling Morton High School, Cicero, Ill.; with the Department of Superintendence, National Education Association.
National Association of State Supervisors and Inspectors of Rural Schools: J. Virgil Chapman, Frankfort, Ky.; Annie Reynolds, Madison, Wis.; with the Department of Superintendence, National Education Association.
National Association of State Universities in the United States of America: Edmond A. Birge, University of Wisconsin, Madison, Wis.; Frank L. McVey, University of Kentucky, Lexington, Ky.; New Orleans, La., November 7–8, 1921.
National Association of Teacher's Agencies: W. H. Jones, Columbia, S. C.; C. Wilbur Cary, Hartford, Conn.; with the Department of Superintendence, National Education Association.
National Association of Teachers in Colored Schools: H. L. McCrorey, Biddle University, Charlotte, N. C., R. S. Grassley, 446 West Pearl Street, Jackson, Miss.; Hampton Institute, July 26–29, 1922.
National Association of Teachers of Speech: A. M. Drummond, Cornell University, Ithaca, N. Y.; Marja Stedman, West Virginia University, Morgantown, W. Va.
National Association of Visiting Teachers: Jane Culbert, 8 West Fortieth Street, New York, N. Y.; Emma G. Case, 407 Municipal Building, Rochester, N. Y.
National Child Labor Committee: David F. Houston, 195 Broadway, New York, N. Y.; Owen R. Lovejoy, 105 East Twenty-second Street, New York, N. Y.; Providence, R. I., June, 1922.
National Collegiate Athletic Association: Palmer E. Pierce, 26 Broadway, New York, N. Y.; Frank W Nicolson, Wesleyan University, Middletown, Conn.; New York, N. Y., December, 1921.
National Commercial Teachers' Federation: Robert A. Grant, Odeon Building, St. Louis, Mo.; John Alfred White, 818 Monroe Street, Gary, Ind.; St. Louis, Mo., December 27–30, 1921.
National Committee for Chamber of Commerce Cooperation with the Public Schools: G. D. Strayer, Columbia University, New York, N. Y.; F. A. Richardson, American City Bureau, Tribune Building, New York, N. Y.
National Committee for the Teaching of Citizenship: Thomas M. Balliet, Washington, D. C.; Harry H. Moore, 3421 Lowell Street NW., Washington, D. C.
National Committee on Mathematical Requirements: J. W. Young, Dartmouth College, Hanover, N. H.; J. A. Foberg, Harrisburg, Pa.; Boston, Mass., September 3, 1921.
National Community Center Association: Mrs. Louis D. Brandeis, Stoneleigh Court, Washington, D. C.; Eugene C. Gibney, Board of Education, New York, N. Y.
National Conference Committee on Standards of Colleges and Secondary Schools: George D. Olds, Amherst College, Amherst, Mass.; Frank W. Nicolson, Wesleyan University, Middletown, Conn.; New York, N. Y., February, 1922.
National Conference of Deans of Women: Mina Kerr, Wheaton College, Wheaton, Mass.; Katharine S. Alvord, De Pauw University, Greencastle, Ind.; New Orleans, La., February or March, 1922.
National Conference of Music Supervisors: Frank R. Beach, Emporia, Kans.; Ada Bicking, Evansville, Ind.
National Conference on Educational Method: W. L. Wright, Huntington, West Va.; J. F. Hosic, Teachers' College, Columbia University, New York, N. Y.; Chicago, Ill., March 1, 1922.
National Conference on the Education of Truant, Backward, Dependent, and Delinquent Children: Charles H. Johnson, Albany, N. Y.; Hobart H. Todd, Industry, N. Y.; Detroit, Mich., September, 1922.
National Council of Administrative Women in Education: Elizabeth Hall, 305 City Hall, Minneapolis Minn.; Elmira D. Cabell, Chicago Normal College, Chicago, Ill.; New Orleans, La., end of February 1922.
National Council of Geography Teachers: Dr. W. W. Atwood, Clark University, Worcester, Mass.; George J. Miller, State Teachers' College, Mankato, Minn.; Washington, D. C., December 28, 1921.
National Council of Normal School Presidents and Principals: L. C. Lord, Charleston, Ill.; C. H. Cooper, Mankato, Minn.; with Department of Superintendence, National Education Association.
National Council of Primary Education: Ella Victoria Dobbs, 1211 University Avenue, Columbia, Mo.; Marion S. Hanchel, 1201 Stuart Avenue, Columbia, Mo.; Richmond, Va., with Department of Superintendence, National Education Association.
National Council of Teachers in Day Schools for the Deaf: Frances Wittstein, 224 Thirty-fourth Street, Milwaukee, Wis.; Clara Newley, Parker Practice School, Chicago, Ill.

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National Council of Teachers of English: Harry G. Paul, University of Illinois, Urbana, Ill.; W. Wilbur Hatfield, 506 West Sixty-ninth Street, Chicago, Ill.: Chicago, Ill, November 24-26, 1921.
National Education Association: Charl O. Williams, Memphis, Tenn.; J. W. Crabtree, 1201 Sixteenth Street, Washington, D. C.; Boston, Mass., week of July 4, 1922.
National Education Association, Department of Superintendence: R. G. Jones, Cleveland, Ohio; Chicago, Ill., February 27-March 8, 1922.
National Education Association, National Council of Education: Homer H. Seerley, State Teachers' College, Cedar Falls, Iowa; Adelaide S. Baylor, 200 New Jersey Avenue NW., Washington, D. C.; Chicago, Ill., latter part of February, 1922.
National Educators' Conservation Society: Charles L. Bristol, New York University, New York, N. Y.; Nomer Gray, High School of Commerce, 120 West Forty-sixth Street, New York, N. Y.
National Federation of College Women: Mrs. J. C. Merriman, Hotel Commodore, New York, N. Y.; Mrs. Flora Warren Seymour, 4917 Blackstone Avenue, Chicago, Ill.; New York, N. Y., probably November, 1921.
National Federation of Modern Language Teachers: W. B. Snow, English High School, Boston, Mass.; C. H. Handschein, Oxford, Ohio: with the National Education Association, 1922.
National Federation of State Education Associations: Charles S. Foos, Reading, Pa.; John P. Everett, Kalamazoo, Mich.
National Kindergarten Association: Major Bradley Martin, 8 West Fortieth Street, New York, N. Y.; Bessie Locke, 8 West Fortieth Street, New York, N. Y.
National League of Compulsory Education Officials: Henry J. Gideon, 1522 Cherry Street, Philadelphia, Pa.; Arthur F. Lederle, Old Library Building, Detroit, Mich.; Detroit, Mich., November 9-12, 1921.
National League of Nursing Education: Anna C. Jammé, 417 Lachman Building, San Francisco, Calif.; Martha M. Russell, University Hospital, Boulder, Colo.; Seattle, Wash., about June 20, 1921.
National League of Teacher-Mothers: Ella Frances Lynch, Bryn Mawr, Pa.; Caroline Katzenstein, 4322 Chestnut Street, Philadelphia, Pa.
National League of Teachers' Associations: Nina O. Buchanan, Hotel Rainier Grand, Seattle, Wash.; Mabel Wilson, John Hay School, Seattle, Wash.; Boston, Mass., with the National Education Association.
National Motion Picture League: Mrs. Adele F. Woodward, Hotel Belleclaire, New York, N. Y.; Mrs. Clara E. Landin, Hotel Belleclaire, New York, N. Y.
National Research Council, Division of Educational Relations: John C. Merriam, Carnegie Institution, Washington, D. C.; Vernon Kellogg, 1701 Massachusetts Avenue, Washington, D. C.; Washington, D. C.
National Round Table for Speech Improvement: Frederick Martin, Martin Institution for Speech Correction, Ithaca, N. Y.: Paul V. Winslow, 616 Madison Avenue, New York, N. Y.; New York, N. Y., January 4, 1922.
National Society for Broader Education: Guy Carleton Lee, 55 West Forty-fourth Street, New York, N. Y.; W. E. Anderson, 168 West High Street, Carlisle, Pa.; New York, N. Y., second week of January, 1922.
National Society for the Study and Correction of Speech Disorders: Walter B. Swift, 110 Bay State Road, Boston, Mass.; A. B. Howe, 110 Bay State Road, Boston, Mass.; Chicago, Ill., February 27-March 3, 1922.
National Society for the Study of Education: F. J. Kelly, University of Kansas, Lawrence, Kans.; Guy M. Whipple, University of Michigan, Ann Arbor, Mich.; New Orleans, La., with the National Education Association.
National Society for Vocational Education: Lewis A. Wilson, New York State Department of Education, Albany, N. Y.; Clotilde Ware, 40 West Forty-second Street, New York, N. Y.; Kansas City, Mo., January 12-14, 1922.
National Society of College Teachers of Education: Harvey Inglis, Harvard University, Cambridge, Mass.; Florence E. Bamberger, Johns Hopkins University, Baltimore, Md., with the Department of Superintendence, National Education Association.
National Speech Arts Association: Charles M. Holt, Minneapolis, Minn.; Jessie E. Tharp, New Orleans, La.
National Story Tellers League: Mary E. Hargreaves, 1602 Five South Wabash Avenue, Chicago, Ill.; Mrs. E. F. Leonard, 1349 Grace Street, Chicago, Ill.: September, 1924.
National University Extension Association: F. W. Reynolds, University of Utah, Salt Lake City, Utah; James A. Moyer, State House, Boston, Mass.; Lexington, Ky., April, 1922.
National Vocational Guidance Association: Mrs. Helen T. Wooley, 264 Medbury Avenue, Detroit, Mich.; Anne Davis, Board of Education, Chicago, Ill.; Chicago, Ill., February, 1922.
New England Association of Chemistry Teachers: Charles H. Stone, 38 Webster Street, Brookline, Mass. S. Walter Hoyt, 20 Stone Road, Belmont, Mass.; Boston, Mass., December, 1921.
New England Association of College Teachers of Education: H. G. Townsend, Smith College, Northampton, Mass.; Douglass Waples, Tufts College, Mass.; Boston, Mass., Fall, 1921.
New England Association of Colleges and Secondary Schools: James A. Tufts, Philips Exeter Academy, Exeter, N. H.; Walter Ballou Jacobs, Brown University, Providence, R. I.; Boston, Mass., December 2-3, 1921.
New England Association of School Libraries: Mary H. Davis, High School, Brookline, Mass.; Edith K. Coulman, High School, Quincy, Mass.; Fall, 1921.
New England Association of School Superintendents: S. C. Hutchinson, Montpelier, Vt.; E. W. Robinson, Fitchburg, Mass.; Boston, Mass., November 10-12, 1921.
New England Association of Teachers of English: Katherine H. Shute, 331 Walnut Avenue, Roxbury, Mass.; A. B. de Mille, Milton Academy, Milton, Mass.; Boston, Mass., December 10, 1921.
New England College Entrance Certificate Board: Arthur J. Roberts, Colby College, Waterville, Me. Frank W. Nicolson, Wesleyan University, Middletown, Conn.; Boston, Mass., April, 1922.
New England High School Commercial Teachers Association: Arthur F. O'Mallry, High School of Commerce, Boston, Mass.; William O. Holden, Pawtucket, R. I.
New England History Teachers' Association: Samuel Morison, Harvard University, Cambridge, Mass.; Horace Kidger, Newton Technical High School, Newtonville, Mass.
New England Home Economics Association: Antoinette Roof, Simmons College, Boston, Mass.; Mary Bosworth Stocking, Simmons College, Boston, Mass.; Boston, Mass., October 15, 1922.
New England Modern Language Association: Clarence W. Eastman, Amherst College, Amherst, Mass.; Elizabeth W. Gerrish, Roxbury High School, Boston 19, Mass.; Boston, Mass., May 13, 1922.
New England Penmanship Association: C. W. M. Blanchard, 61 Monument Street, West Medford, Mass.; Annie C. Woodward, 2 Madison Street, Somerville, Mass.; Boston, Mass., January 28, 1922.
New England Vocational Guidance Association: Frederick J. Allen, Vocational Guidance of Harvard University, Cambridge, Mass.; Laura F. Wentworth, 35 Williams Street, Brookline, Mass.; Cambridge, Mass., July 29, 1921.
North Central Association of Colleges and Secondary Schools: Lotus D. Coffman, University of Minnesota, Minneapolis, Minn.; Harry Morehouse Gage, Coe College, Cedar Rapids, Iowa; Chicago, Ill., March 16-18, 1922.

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North Central Council of State Normal School Presidents: F. A. Cotton, La Crosse, Wis.; J. G. Crabbs, Greeley, Colo.
Northern Baptist Education Society: Austen K. de Blois, 437 Shawmut Avenue, Boston, Mass.; Robert L. Webb, 1066 Commonwealth Avenue, Boston, Mass.; Worcester, Mass., October 24, 1922.
Northwest Association of Secondary and Higher Schools: Hopkins Jenkins, Jefferson High School, Portland, Oreg.; Philip Soulen, University of Idaho, Moscow, Ida.; Spokane, Wash., March 29-31, 1922.
Northwestern Association of History, Government and Economics Teachers: T. O. Ramsey, North Central High School, Spokane, Wash.
Playground and Recreation Association of America: Joseph Lee, 1 Madison Avenue, New York, N. Y.; Howard S. Braucher, 1 Madison Avenue, New York, N. Y.
Presbyterian Educational Association of the South: Henry H. Sweets, 410 Urban Building, Louisville, Ky.; D. S. Gage, 410 Urban Building, Louisville, Ky.; Montreat, N. C., July, 1922.
Progressive Education Association: Arthur E. Morgan, Ludlow Building, Dayton, Ohio; Mrs. Gertrude Stevens Ayres, 1719 Thirty-fifth Street, Washington, D. C., Spring, 1922.
Religious Education Association: Theodore G. Soares, University of Chicago, Chicago, Ill.; Henry T. Cope, 1440 East Fifty-seventh Street, Chicago, Ill., Spring, 1922.
School Board Member's Association: Secretary, Henry S. Chapin, 23 Flatbush Avenue, Brooklyn, N. Y.
Self-Government, Incorporated: Richard Welling, 90 Broadway, New York, N. Y.; Wilmot V. Trevoy, 47 Pierpont Street, Brooklyn, N. Y.
Societe Nationale des Professeurs Français: Auguste George, 100 St. Nicholas Avenue, New York, N. Y.; Jean B. Zacharie, 9 Mitchell Place, New York, N. Y.; New York, N. Y., September 17, 1921.
Society for the Promotion of Engineering Education: C. F. Scott, Yale University, New Haven, Conn.; F. L. Bishop, University of Pittsburgh, Pittsburgh, Pa.; Urbana, Ill., June, 1922.
Society for Visual Education: Rollin D. Salisbury, University of Chicago, Chicago, Ill.; Forest Ray Moulton, 327 South La Salle Street, Chicago, Ill.; Chicago, Ill., February 13, 1922.
Society of Directors of Physical Education in Colleges: F. W. Luehring, University of Nebraska, Lincoln, Nebr.; T. N. Metcalf, Oberlin College, Oberlin, Ohio; New York, N. Y., December, 1921.
Society of Progressive Oral Advocates: Max A. Goldstein, 3858 Westminster, St. Louis, Mo.; Edna Davis, 818 South Kingshighway, St. Louis, Mo.; St. Louis, Mo., June, 1922.
Southern Baptist Education Association: W. L. Poteat, Wake Forest, N. C.; Albert R. Bond, Jefferson County Bank, Birmingham, Ala.; Birmingham, Ala., December 1, 1921.
Southern Commission of Accredited Schools: A. B. Hill, State Capitol, Little Rock, Ark.; Harry Clark, Baptist Convention Building, Nashville, Tenn.; Birmingham, Ala., November 30, 1921.
Southern Commission on Higher Institutions: Bert E. Young, Vanderbilt University, Nashville, Tenn.; H. D. Campbell, Washington and Lee University, Lexington, Va.; Birmingham, Ala., November 29, 1921.
Southern Education Society: J. P. McConnell, East Radford, Va.; A. P. Bourland, 1707 Kilbourne Place, Washington, D. C.; Asheville, N. C., August 2-4, 1922.
Southern Home Economics Association: Edith M. Thomas, Department Vocational Education, West Raleigh, N. C.; Christine South, Winthrope College, Rock Hill, S. C.
Southern Industrial Education Association: C. C. Calhoun, Evans Building, Washington, D. C.; Mrs. Augusta S. Stone, 1228 Connecticut Avenue, Washington, D. C.; Washington, D. C., October 31, 1921.
Southern Woman's Educational Alliance: Oris Latham Hatcher, Hotel Richmond, Richmond, Va.; Rachel E. Gregg, Hotel Richmond, Richmond, Va.; Richmond, Va., October 20, 1921.
United States Bureau of Education Committee on Highway and Highway Transport Education: C. J. Tilden, Willard Building, Washington, D. C.; Walton C. John, Bureau of Education, Washington, D. C.
University Commission on Southern Race Questions: Josiah Morse, University of South Carolina, Columbia, S. C.; W. M. Hunley, Lexington, Va.
Vocational Education Association of the Middle West: J. A. James, University of Wisconsin, Madison, Wis.; L. W. Wahlstrom, 1711 Estes Avenue, Chicago, Ill.; Milwaukee, Wis., January 11-14, 1922.
Western Arts Association: Carl T. Cotter, Board of Education, Toledo, Ohio; L. R. Abbott, Board of Education, Grand Rapids, Mich.; Cincinnati, Ohio, May 2-5, 1922.
Women's Educational and Industrial Union: Marion Churchill, 22 Kensington Road, Arlington, Mass.; Elizabeth W. Schermerhorn, 84 Prescott Street, Cambridge, Mass.; Boston, Mass., November 8, 1921.
Women's Intercollegiate Association for Student Government: Josephine Liedemuth, 321 Brookline Avenue, Boston, Mass.; Miriam Brailey, Mt. Holyoke College, South Hadley, Mass.; Boston, Mass., November, 1921.
Y. M. C. A. Educational Secretaries Association: B. D. Edwards, Y. M. C. A., Detroit, Mich.; L. C. Nichols, Y. M. C. A., Portland, Oreg.; June, 1923.

2. *State.*

Alabama:
- Alabama Educational Association: T. W. Palmer, Montevello; H. G. Dowling, Cullman.
- Alabama History Teachers' Association: Mrs. Thomas M. Owen, Montgomery.
- Alabama Home Economics Association: Mrs. Thorington Home, Montgomery; Madge Johnson, Montevallo; Birmingham, April, 1922.
- Alabama Sunday School Association: James L. Thomas, University; S. H. Blan, Troy; Gadsden, probably April 26, 1922.
- Association of Alabama Colleges: M. W. Swartz, Woman's College, Montgomery; James G. Doster University; April, 1922.
- Association of English Teachers of Alabama: Mrs. E. D. Thame, 521 Thirteenth Avenue, Tuscaloosa; Ruth L. Long, Selma.

Arizona:
- Arizona State Teachers' Association: A. O. Neal, University of Arizona, Tucson; A. L. Jones, Phoenix October or November, 1922.

Arkansas:
- Arkansas State Teachers' Association: D. T. Henderson, Lake Village; Irene Jones, Leslie; Little Rock, November 10-12, 1921.

California:
- California Council of Education: E. Morris Cox, City Hall, Oakland; Arthur H. Chamberlain, Flood Building, San Francisco.
- California Federation of School Women's Clubs: Florence Stahl, 187 South Eleventh Street, San Jose; Alice M. Williams, 327 Forty-first Street, Oakland.
- California High School Teachers' Association: Horace M. Rebek, Santa Monica; Arthur H. Chamberlain, Flood Building, San Francisco.
- California Music Teachers' Association: Mrs. Edward Pease, I. O. O. F. Building, Sacramento; Mary E. Ireland, 2414 T Street, Sacramento; Oakland, July, 1922.
- California State Association of Teachers of English: Effie B. McFadden, State Normal School, San Francisco; Benjamin Weed, Ross; December, 1921.

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California—Continued.
California Teachers' Association, Bay Section: Elizabeth Arlett, 24 Linda Avenue, Oakland; Frank H. Boren, University High School, Oakland; October, 1922.
California Teachers' Association, Central Coast Section: C. W. Edwards, Fresno; James A. McGuffin, 705 Yale Avenue, Fresno.
California Teachers' Association, Northern Section: L. F. Farris, Marysville; Mrs. Minnie R. O'Neil, City Hall, Sacramento, October, 1922.
California Teachers' Association, Southern Section: Merton E. Hill, Upland; F. L. Thurston, Pasadena; Los Angeles, December 21–23, 1921.
Central California Teachers' Association: Clarence W. Edwards, Fresno; James A. McDuffin, 705 Yale Avenue, Fresno; Fresno, December, 1921.

Colorado.
Colorado Education Association: R. J. Walters, Rocky Ford; H. B. Smith, 532 Commonwealth Building, Denver; Grand Junction, November 7–10, Pueblo, November 9–11, Denver, November 9–11, 1922.

Connecticut:
Connecticut Arts Association: Maud A. Simpson, 101 Wilcox Avenue, Meriden; Rosemary Brady, 774 East Main Street, Meriden; Bridgeport, February 2–4, 1922.
Connecticut Home Economics Association: Dorothy Buckley, Storrs; Annie I. Robertson, 219 Church Street, Hartford; Hartford, October, 1921.
Connecticut State Teachers' Association: Levi T. Garrison, Willimantic; Samuel P. Willard, Colchester; Bridgeport, February 3–4, 1922.
Connecticut Superintendents' Association of Public Schools: Elmer H. Havens, Bridgeport; Howard S. Challenger, 985 Noble Avenue, Bridgeport; Bridgeport, October 10, 1921.
Connecticut Trade Educators' Association: F. J. Trinder, Capitol, Hartford; Everett D. Packard, Box 392, Stamford.

District of Columbia:
Administrative Women in Education of the District of Columbia: Vice president, Adelaide Davis, Seward Apartment, Washington; Mary A. Dilger, 1211 Euclid Street NW., Washington.
Federal Schoolmen's Club: Paul Bartsch, 1456 Belmont Street NW., Washington; Alvin W. Miller, 1323 Randolph Street, Washington; Washington, November 5, 1921.
High School Teachers' Association of the District of Columbia: Harry English, Franklin School, Washington; Mrs. M. D. Merrill, Central High School, Washington; Washington, October, 1921.
Principals' Association of the Graded White Schools: Metella King, 1001 Eighth Street NW., Washington; Mary A. Dilger, 1211 Euclid Street NW., Washington.
School Club: Gordon D. Houston, 1758 T Street NW., Washington; Edwin B. Henderson, Falls Church, Va.; Washington, October 8, 1921.

Florida:
Florida Educational Association: W. S. Cawthorn, Gainesville; R. L. Turner, Innerness; Orlando, December 27–29, 1921.

Georgia:
Georgia County School Officials' Association: M. L. Brittain, Atlanta; M. L. Duggan, Atlanta.
Georgia Educational Association: Kyle T. Alfriend, Milledgeville; A. P. Cleveland, Valdosta.
Georgia State High School Teachers' Association: Joseph Stewart, Athens; J. H. Purks, Madison; Athens.
Georgia State Teachers' Association: W. D. Thomas, Southern University, Baton Rouge; Silas X. Floyd, 1025 Twelfth Street, Augusta; Columbus, May 8–10, 1922.

Idaho:
Idaho State Teachers' Association: Secretary, Alice Beach, Montpelier; probably Boise, Thanksgiving vacation, 1921.

Illinois:
Federation of Illinois Colleges: Joseph R. Harker, Illinois Women's College, Jacksonville; E. E. Rall, Northwestern College, Naperville; Evanston, February 20–21, 1922.
High School Conference, University of Illinois: H. A. Hollister, 254 Administration Building, Urbana; Urbana, November 23–25, 1922.
Illinois Association of Teachers of English: Clara Hawkes, Cicero; E. C. Baldwin, Urbana; Urbana, November 19, 1922.
Illinois City Superintendents' Association: J. M. Allen, Springfield; H. B. Fisher, Streator; Springfield, October 27–28, 1921.
Illinois State Association of Elementary School Supervisors: F. W. Rawcliffe, Cicero; Mabel W. Shaw, 208 Buell Avenue, Joliet; Macomb, May 12–13, 1922.
Illinois State School Board Association: E. H. Abbott, Elgin; Mrs. G. A. Stover, 648 South Taylor Avenue, Oak Park; Springfield, October 27–28, 1922.
Illinois State Teachers' Association: K. D. Waldo, Aurora; Robert C. Moore, Carlinville; Springfield, December 28–30, 1921.
Schoolmasters' Club of Illinois: H.V. Church, Cicero; Anthony Middleton, 221 Arthur Avenue, Peoria; Bloomington, February 3–4, 1922.

Indiana:
Indiana Association of Psychology and Education: Oscar H. Williams, Indianapolis; Frances M. Kelsey, Teachers College, Indianapolis; Indianapolis, October, 1921.
Indiana Association of Teachers of English: Mabel Goddard, Technical High School, Indianapolis; Bess Sanders, High School, Greencastle; Indianapolis, October 19–21, 1922.
Indiana City and Town Superintendents' Association: T. F. Fitzgibbon, Muncie; W. C. Boble, Swayzee;; Indianapolis, February 2–4, 1922.
Indiana History Teachers' Association: Elmer Andrews, Purdue University, Lafayette; Edgar Forsythe, Indianapolis; Indianapolis, March 31 and April 1, 1922.
Indiana Home Economics Association: Mrs. Morton Fordice, Russellville; Florence M. Boston, Purdue University, Lafayette; Lafayette, January 12, 1922.
Indiana Music Teachers' Association: P. Marnus Paulsen, Marion; Effie M. Harvey, Indianapolis.
Indiana State Kindergarten Association: Ruth Patterson, 717 North Alabama Street, Indianapolis; Mary J. Africa, 2130 North New Jersey Street, Indianapolis; Indianapolis, October 20–22, 1921.
Indiana State Teachers' Association: H. L. Smith, Bloomington; Charles O. Williams, Richmond; Indianapolis, October 19–21, 1922.
Indiana University Conference on Educational Measurement: H. L. Smith, School of Education; Indiana University, Bloomington.

Iowa:
Iowa Association of Mathematics Teachers: W. E. Beck, Iowa City; Marion M. Roberts, 219 Ash Avenue, Ames.
Iowa Association of Science Teachers: Walter H. Nead, 2124 West Broadway, Council Bluffs; Frances Church, East High School, Des Moines; Des Moines, November 3, 1921.

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Iowa—Continued.
Iowa Association of Teachers of English: Hardin Craig, University of Iowa, Iowa City; H. Y. Moffett, University of Iowa, Iowa City; Des Moines, November, 1922.
Iowa Home Economics Association: Mrs. Helen Wagner, Des Moines; Lillie Knappenberger, Iowa State College, Ames; Des Moines, fall, 1921.
Iowa Society of Social Science Teachers: Elizabeth Bennett, Cedar Rapids; Ethel L. Goodwin, 1012 Des Moines Street, Des Moines; Des Moines, November 3–4, 1922.
Iowa State Federation of Teachers' Clubs: Mrs. M. A. Barr, Muscatine; Mary A. Lord, East Junior High School, Sioux City; Des Moines, November, 1922.
Iowa State Teachers' Association: L. H. Minkel, Fort Dodge; Charles F. Pye, 407 Youngerman Building, Des Moines; Des Moines, November 3–5, 1921.

Kansas:
Kansas Association of Mathematics Teachers: Minnie Dingee, High School, Hutchinson; Edna E. Austin, Number Six, The Devon, Topeka; Topeka, January, 1922.
Kansas Association of Teachers of English: Mrs. Charles A. Mahin, Cheney's; Nellie Ansel, Topeka.
Kansas History Teachers' Association: Secretary, Rita Dielman, Manhattan; Topeka, October, 1921.
Kansas Modern Language Association: John V. Cortelyou, Kansas State Agricultural College, Manhattan; Helen J. McKinney, High School, Atchinson.
Kansas State Teachers' Association: J. W. Miley, Girard; F. L. Pinet, Topeka; Topeka, Hays, Hutchinson, and Parsons, October 19–21, 1922.

Kentucky:
Association of Kentucky Colleges and Universities: W. J. Hutchins, Berea College, Berea; Frank L. Rainey, Centre College, Deanville, Lexington, December 3, 1921.
Kentucky Educational Association: Mrs. M. H. Hall, Shelbyville; R. E. Williams, 4518 Southern Parkway, Louisville; Louisville, April 12–14, 1922.
Kentucky Music Teachers' Association: Caroline Bourgard, 1151 East Broadway, Louisville; Flora Marguerite Bertelle, 734 Fourth Avenue, Louisville; Louisville, April or May, 1922.

Louisiana:
Louisiana Council of Education: A. B. Dinwiddie, Tulane University, New Orleans; G. C. Huckaby, Baton Rouge.
Louisiana Professional Teachers' League: J. M. Smith, Lafayette; P. H. Griffith, Baton Rouge.
Louisiana State Association of English Teachers: A. G. Reed, Louisiana State University, Baton Rouge; Annie T. Bell, Baton Rouge; Lake Charles, April, 1922.
Louisiana Teachers' Association: P. H. Griffith, Baton Rouge; L. J. Alleman, Natchitoches; Lake Charles, first part of April, 1922.

Maine:
Maine Teachers' Association: G. Herbert Foss, Fort Fairfield; Adelbert W. Gordon, Augusta; Portland, October 27–28, 1921.

Maryland:
Maryland Council of Teachers of English: Glenn R. Owens, Baltimore City College, Baltimore; Ada Zouck, Reistertown, November 25, 1922.
Maryland History Teachers' Association: Lena C. Van Bibber, 129 East North Avenue, Baltimore; Laura J. Cavines, Western High School, Baltimore; Baltimore, February, 1922.
Maryland State Teachers' Association: Norman W. Cameron, Teachers' Training School, Baltimore; Hugh W. Caldwell, Elkton, Baltimore, Thanksgiving week 1922.

Massachusetts:
Conference on Rural Education: William B. Aspinwall, State Normal School, Worcester; Honora G. Brown, State Normal School, Worcester; Worcester, March 17, 1922.
Harvard Teachers' Association: William L. W. Field, Milton Academy, Milton; Edwin A. Shaw, Harvard University, Cambridge; Cambridge, April 29, 1922.
High School Masters Club of Massachusetts: Charles F. Warner, High School, Springfield; John W. Hutchins, High School, Malden; Boston, March 25, 1922.
Massachusetts Public School Janitors Association: John F. Carr, 38 Glenwood Avenue, Cambridge; Terrence F. Casey, 163 Howard Street, Lowell; Lowell, second week in July, 1922.
Massachusetts Schoolmasters' Club: Charles S. Clark, Somerville; Leonard M. Patton, Milton; Boston, October, 1921.
Massachusetts State Normal School Teachers' Association: Roy L. Smith, State Normal School, North Adams; M. Harriet Bishop, 1 Normal Street, Worcester; Bridgewater, September, 8, 1922.
Massachusetts State Superintendents' Association: Fayette K. Congdon, Northampton; S. Howard Chace, Beverly; Boston, December 1, 1922.
Massachusetts Teachers' Federation: Mary McSkimmon, 20 Clinton Road, Brookline, Ernest Wakefield, 238 Elm Street, Somerville 44; Cambridge, October 21, 1922.
Tufts College Teachers' Association: Adelbert H. Morrison, Mechanical Arts High School, Boston; J. Louis Keegen, Tufts College; Tufts College, April, 1922.

Michigan:
Conference on Educational Measurements: Burton Barnes, 1354 Broadway, Detroit; George Birkam, 4426 Hurlbut Avenue, Detroit; Detroit, May, 1921.
Michigan Association of School Superintendents and School Board Members: R. W. Cooper, Lansing; H. C. Daley, Highland Park, Ann Arbor, March 27–28, 1922.
Michigan Schoolmasters' Club: J. P. Edmonson, Ann Arbor; Louis Parker Jocelyn, 545 South Division Street, Ann Arbor; Ann Arbor, March 30, 1922.
Michigan State Federation of Teachers' Clubs: Cora Riggs, Grand Rapids; Lucy Betts, Grand Rapids.
Michigan State Home Economics Association: Mary E. Sweeny, Michigan Agricultural College, East Lansing; Lenna F. Cooper, Battle Creek Sanitarium School of Home Economics, Battle Creek; Corvallis, Oreg., July 8, 1922.
Upper Peninsula Educational Association: C. L. Phelps, Ishpeming; W. F. Lewis, Marquette; Sault Ste. Marie, October 11–13, 1922.

Minnesota:
Minnesota Educational Association: Theda Gildemeister, State Teachers College, Winona; C. G. Schulz, 1661 Portland Avenue, St. Paul; Minneapolis, November 2–5, 1921.
Minnesota Educational Association of School Board Members: Victor E. Anderson, Wheaton; L. P. Wood, Delevan; St. Paul, November 3–5, 1921.
Minnesota Music Teachers' Association: Stanley J. Avery, 435 Ridgewood Avenue, Minneapolis; Harriet Allen, 1855 Ashland Avenue, St. Paul; St. Paul, June, 1922.
Minnesota State Normal School Teachers: Robert R. Reed, State Teachers College, Winona; Grace B. Thacker, State Teachers College, Bemidji; Minneapolis, sometime between November 2 and 5, 1921.

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Mississippi:

Mississippi Classical Association: O. A. Shaw, University.

Mississippi Teachers' Association: H. L. McCleskey, Station A, Hattiesburg; F. M. Coleman, Junior, Jackson; Jackson, May 3–6, 1922.

Missouri:

Missouri College Union: J. L. Roemer, St. Charles; F. Bevay Smith, Central College, Fayette; Cameron, November, 1922.

Missouri Society of Teachers of English: Lucy J. Ball, State Teachers College, Warrensburg, Early G. Tyler, Lafayette High School, St. Joseph; St. Louis, November 2–5, 1921.

Missouri Society of Teachers of History and Government: W. A. Lewis, Junior College, Kansas City; J. E. Wrench, Columbia; St. Louis, November 11–13, 1921.

Missouri Society of Teachers of Mathematics and Science: J. K. Laughlin, Kansas City; Alfred Davis, Soldan High School, St. Louis.

Missouri State Negro Teachers' Association: Clement Richardson, Lincoln University, Jefferson City; H. O. Cook, 2436 Montgall, Kansas City; Kansas City, November, 1922.

Missouri State Teachers' Association: Sam A. Baker, Jefferson City; E. M. Carter, Columbia; St. Louis, November 15–18, 1922.

Montana:

Montana State Council of English Teachers: Ida Davis, Bozeman; Margaret Roman, Missoula; Missoula, May, 1922.

Montana State Teachers' Association: J. M. Hamilton, Bozeman; Oscar Boland, Lewistown.

Nebraska:

Nebraska History Teachers' Association: Mrs. Mattie A. Branthwaite, 341 North Eleventh Street, Lincoln; Margaret Davis, 1712 East Street, Lincoln; Lincoln, May 1922.

Nebraska Home Economics Association: Mrs. Lulu Kortz Hudson, Simeon; Mary Ellen Brown, 3321 R Street, Lincoln.

Nebraska Music Teachers' Association: August Molzer, Oliver Building, Lincoln; Paul Reuter, Seward.

Nebraska Schoolmasters' Club: A. H. Stoley, Hastings; H. E. Bradford, Lincoln.

Nebraska State Teachers' Association: W. H. Morton, Fairbury; H. O. Sutton, Teachers College, Kearney; Omaha, November 9–11, 1921.

Nebraska Women's Educational Club: E. Ruth Pyrete, McKinley School, Lincoln; Mary Crawford, Kearney; Omaha, first week in November, 1921.

Nevada:

Nevada State Educational Association: E. L. McKeown, Carson City; E. O. Vaughan, Reno; probably Reno, December, 1921.

New Hampshire:

New Hampshire Practical Arts Club: John F. Cook, 34 Union Street, Lebanon; Herbert C. Wilcox, 229 North Main Street, Concord; Concord, February, 1922.

New Hampshire State Teachers' Association: Francis J. Clayton, Parker School, Concord; Caroline E. Head, 97 Liberty Street, Manchester; October, 1922.

New Jersey:

Association of Teachers of English of New Jersey: Charles H. Whitman, Rutgers College, New Brunswick; Mabel A. Tuttle, High School, Linden; Newark, March 25, 1922.

Council of Education of the State of New Jersey: Ira T. Chapman, New Brunswick; J. Howard Hulsart, March 10–11, 1922.

New Jersey Physical Education Association: Gustav H. Bojus, Public Schools, Jersey City; F. W. Maroney, Department of Public Instruction, Trenton.

New Jersey Science Teachers' Association: Melville T. Cook, Rutgers College, New Brunswick; R. A. Whitmoyer, High School, Atlantic City; New Brunswick, October, 1921.

New Jersey State Teachers' Association: John J. Unger, Bridgeton; Henry J. Neal, Collingswood; Atlantic City, December 27–29, 1921.

Vocational Arts Association of New Jersey: Griselda Ellis, Girls' Vocational School, Newark; James E. Gaffney, 201 Victoria Avenue, Atlantic City; May 14–15, 1922.

New Mexico:

New Mexico Association for Science: J. S. Chapman, Santa Fe; A. O. Weese, Albuquerque; November, 1921.

New Mexico Educational Association: Josie Lockard, Raton; John Milne, Albuquerque; Albuquerque, November 22–24, 1922.

New York:

Associated Academic Principals: Sherman L. Howe, Carthage; H. Claude Hardy, Fairport; Syracuse, December 29–31, 1921.

Association of Agricultural Teachers and Principals: L. R. Lockwood, Hannibal; I. N. Charlton, Cobleskill; Ithaca, August 3, 1921.

Association of Colleges of the State of New York: Frederick C. Ferry, Hamilton College, Clinton; Augustus S. Downing, Education Building, Albany.

New York State Association of District Superintendents: John C. Mallock, Churchville; Mrs. Mildred Pratt, Lacona; Rochester, January 11–13, 1922.

New York State Association of English Teachers: James M. Spinning, West High School, Rochester; Walter P. McIntosh, White Plains; Syracuse, November 28–29, 1922.

New York State Council of City School Superintendents: Ernest Hartwell, Buffalo; R. B. Kelley, Lockport; Albany, October, 1922.

New York State Council of Elementary School Principals and Teachers: William B. Blaisdell, Temple Street, Fredonia; D. B. Mills, Binghamton; Buffalo, November 21–23, 1921.

New York State History Teachers' Association: Arthur H. Ferguson, Central High School, Syracuse; Frances Madden, High School, Schenectady; Syracuse, November 27–29, 1922.

New York State Home Economics Association: Grace Gillett, State College for Teachers, Albany; Edith A. Sarver, 1 State Street, Schenectady; Syracuse, November, 1922.

New York State Hygiene and Physical Education Association: Carl Burkhart, Buffalo; M. Deem, Albany; Syracuse, November 27–29, 1922.

New York State Modern Language Association: Charles H. Holzwarth, Rochester; Ferdinand F. Di Bartolo, Buffalo; Syracuse, November 28–29, 1922.

New York State Science Teachers' Association: Ernest F. Conway, Syracuse; George Fowler, Syracuse; Syracuse, November 22–24, 1922.

New York State Teachers' Association: John A. De Camp, Utica; Richard A. Searing, 617 North Goodman Street, Rochester; Syracuse, November 27–29, 1922.

North Carolina:

Association of Teachers of Secondary Mathematics: A. W. Hobbs, Chapel Hill; Fannie Start Mitchell, Wilmington; Greenville, about February 3, 1922.

North Carolina Association of City Superintendents: E. J. Coletrane, Roanoke Rapids; Hoy Taylor Franklinton; Raleigh, Spring, 1922.

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North Carolina—Continued.
North Carolina Association of Geography Teachers: John J. Blair, Wilmington; Collier Cobb, Chapel Hill; Chapel Hill, July 13, 1922.
North Carolina Educational Association: Mildred Harrington, Aberdeen; Mary L. Harris, Concord.
North Carolina Sunday School Association: Golbert T. Stepenson, Winston-Salem; D. W. Sims, 304 Masonic Temple, Raleigh; Charlotte, April 11-13, 1922.
North Carolina Teachers' Assembly: Charles E. Brewer, Raleigh; A. T. Allen, Raleigh; Raleigh November 23-25, 1921.

North Dakota:
North Dakota Council of Geography Teachers: J. E. Switzer, State Normal School, Valley City; Hulda L. Winsted, State Normal School, Minot.
North Dakota Education Association: Nelson Sauvain, Devils Lake; R. L. Brown, Valley City.

Ohio:
Conference of Ohio Presidents and Deans: Elias Compton, College of Wooster; Mrs. Clara T. Brumback, Denison University, Granville; Columbus, the Thursday before Easter, 1922.
Ohio Association of English Teachers: Edna S. Pratt, High School of Commerce, Columbus; C. E. Thomas, Woodward High School, Cincinnati; Columbus, Christmas Holidays, 1921.
Ohio College Association: E. A. Miller, Oberlin College, Oberlin; E. R. Mead, Ohio Wesleyan University, Delaware.
Ohio History Teachers' Association: Arthur Hirsch, Delaware; G. A. Washburne, Columbus; November, 1922.
Ohio Home Economics Association: Martha Hanna, Miami University, Oxford; Henrietta Gromme, Home Economics Department, Ohio State University, Columbus; Columbus, December 28, 1921.
Ohio Industrial Arts Teachers' Association: J. W. Davis, Warren; G. R. Frank, Columbus, December, 1921.
Ohio League of Teachers' Organizations: Amie G. Inman, 1978 East One hundred and sixteenth Street, Cleveland; F. W. Englehardt, 2204 Fulton Avenue, Cincinnati; Columbus, December 26-27, 1921.
Ohio Society of College Teachers of Education: Bruce W. Burch, Wittenberg College, Springfield; F. C. Landsittel, Ohio State University, Columbus; Columbus, March 31-April 1, 1922.
Ohio State Teachers' Association: W. H. Kirk, East Cleveland; F. E. Reynolds, West Park; Columbus, December 27-29, 1921.

Oklahoma:
Oklahoma Council of Teachers of Education: Adelia Clifton, Central High School, Oklahoma City; Ada Hanna, High School, Shawnee.
Oklahoma Education Association: N. O. Hopkins, Okmulgee; M. A. Nash, 401 Capitol Building, Oklahoma City; Oklahoma City, February 9-11, 1922.
Oklahoma History Teachers' Association: M. L. Wardell, Pawhuska; C. W. Turner, 1623 Ellison City; Oklahoma City, February 8-10, 1922.

Oregon:
Oregon Council of Teachers of English: Edna Sterling, Salem; Mrs. Margaret B. Goodall, 1790 Fairmount Boulevard, Eugene.
Oregon State Teachers' Association: Mrs. Mary L. Fulkerson, Court House, Salem; E. D. Ressler, Corvallis; Portland, December 29-31, 1921.

Pennsylvania:
Association of School Board Secretaries of Pennsylvania: John G. Shearer, Ford City; Ferdinand Reisgen, Ford City.
Pennsylvania Association of Deans and Advisers of Women: Thyrsa Amos, University of Pittsburgh, Pittsburgh; Grace D. McCarthy, State Normal School, West Chester.
Pennsylvania State Education Association: William W. Evans, Bloomsburg; James Herbert Kelly, 10 South Market Square, Harrisburg; Altoona, December 27-30, 1921.
Pennsylvania State Modern Language Association: J. P. W. Crawford, University of Pennsylvania, Philadelphia; Ellis A. Schnabel, Northeast High School, Philadelphia; December 28, 1921.
Pennsylvania State School Directors' Association: Mrs. E. S. H. McCauley, Beaver; D. D. Hammelbaugh, Harrisburg; Harrisburg, February 9-10, 1922.
Public Education and Child Labor Association of Pennsylvania: Franklin N. Brewer, Wanamaker's Store, Philadelphia; B. M. Watson, 1720 Chestnut Street, Philadelphia.
Schoolmen's Week (University of Pennsylvania): Harlan Updegraff, University of Pennsylvania, Philadelphia; LeRoy A. King, University of Pennsylvania, Philadelphia; Philadelphia, probably April 13-15, 1922.

Rhode Island:
Rhode Island History Teachers' Association: Stephen S. Colvin, Brown University, Providence; M. Davitt Carroll, 76 Beaufort Street, Providence.
Rhode Island Institute of Instruction: John F. Deering, Riverpoint; M. Davitt Carroll, 122 Pocasset Avenue, Providence.

South Carolina:
Association of Colleges of South Carolina: Henry N. Snyder, Wofford College, Spartanburg; L. T. Baker, University of South Carolina, Columbia.
South Carolina Home Economics Association: Christine South, Winthrop College, Rock Hill; Sarah Gilman, Columbia.
South Carolina School Improvement Association: Mary Eva Hite, Batesburg; Mattie E. Thomas, State Department of Education, Columbia.
South Carolina State Colored Teachers' Association: J. L. Cain, Darlington; I. M. A. Myers, Columbia.
South Carolina State Teachers' Association: E. C. McCants, Anderson; R. C. Burts, Rock Hill.

South Dakota:
South Dakota Commercial Teachers' Association: Thomas W. Noel, Yankton; Ella Starr, Madison.
South Dakota Education Association: Jane Emry, Madison; A. H. Seymour, Aberdeen; Pierre, November 27-29, 1922.

Tennessee:
Physical Education Society of Tennessee: John R. Bender, Knoxville; Jeannette M. King, Murfreesboro; Nashville, about Easter, 1922.
Tennessee College Association: George J. Burnett, Tennessee College, Murfreesboro; Thomas Alexander, Peabody College, Nashville; Nashville, March 16-18, 1922.
Tennessee State Public School Officers' Association: R. L. Jones, Chattanooga; P. L. Harned, Clarksville.
Tennessee State Teachers' Association: R. L. Jones, Murfreesboro; P. L. Harned, Clarksville; Nashville, April, 1922.

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Texas:
Home Economics Association of Texas: Joan Hamilton, Denton; Wealthy Hale, Denton; probably San Antonio, December 1, 1922.
Texas State Teachers' Association: M. H. Moore, Fort Worth; R. T. Ellis, 2938 Lipscomb Street, Fort Worth; Dallas, November 23-25, 1922.
Texas State Teachers' Association (colored): E. D. Pierson, 312 Robin Street, Houston; Mrs. F. A. Robinson, 1218 West Lacy Street, Palestine; Fort Worth, November 30, 1922.

Utah:
Utah Educational Association: B. Roland Lewis, Salt Lake City; Salt Lake City, October 20-22,921.
Utah Home Economics Association: Mrs. Nell Strowig, 251 South Fourth Street East, Salt Lake City; Florence L. Parry, 3387 Highland Drive, Salt Lake City.

Vermont:
Schoolmasters' Club of the State of Vermont: H. L. Dickinson, St. Albans; Eugene H. Clowse, Richmond; Rutland, October, 1921.
Vermont State Teachers' Association: Etta Franklin, Rutland; Alice Chandler, St. Albans; Rutland, October 12-14, 1921.
Vermont Women Teachers' Club: Mrs. Mary B. Buckham, Manchester; Mrs. Mary M. Deyett, Shelburne; October 12, 1922.

Virginia:
Association of Virginia Colleges: Charles G. Maphis, University; E. W. McWhorter, Hampden Sidney; Richmond, early February, 1922.
Cooperative Education Association of Virginia: Mrs. B. B. Munford, 503 East Grace Street, Richmond; George W. Guy, Box 1667, Richmond; Richmond, Thanksgiving week, 1922.
Public School Trustees Association of Virginia: J. B. Friend, Drakes Branch; M. F. McGehee, Keysville; Richmond, Thanksgiving week, 1922.
Rural Life Conference (University of Virginia): Chairman, Florence H. Stubbs; Charlottsville, August, 1922.
Virginia English Teachers' Association: J. R. L. Johnson, East Radford; Miss Ray Van Vost, John Marshall High School, Richmond.
Virginia Society for the Study of Education: J. Preston McConnell, East Radford; Robert T. Kerlin, Lexington.
Virginia State Primary Teachers' Association: Pauline B. Williamson, 805 East Marshall Street, Richmond; Mabel E. Culkin, State Normal School, Farmville; Richmond, November, 1922.
Virginia State Teachers' Association: J. A. C. Hurt, Mytheville; W. T. Sanger, Richmond; Richmond, last week in November, 1922.

Washington:
Puget Sound English Masters' Club: George W. Saunderson, Lincoln High School, Seattle; H. D. Johnson, West Seattle High School, Seattle.
Puget Sound Schoolmasters' Club: R. F. Bown, Tacoma; Frank Farrar, 6725 Twenty-fourth Avenue NW., Seattle; Tacoma, about December 1, 1922.
Washington Education Association: Ralph W. Swetman, Ellensburg; Anna L. Gifford, Seattle, Bellingham, October, 1922.

West Virginia:
West Virginia Council of Teachers of English: W. H. Franklin, Huntington.
West Virginia Education Association: George M. Ford, Charleston; W. W. Trent, Elkins; Huntington, November 3-5, 1922.

Wisconsin:
Vocational School Teachers' Association: T. S. Rees, Racine; John B. Coleman, La Crosse; Milwaukee, January 11-14, 1922.
Wisconsin Agricultural Education Association: J. M. May, River Farm; Glen Lycan, Plymouth.
Wisconsin Association for Educational Research: F. L. Clapp, University of Wisconsin, Madison; Mrs. Cecile White Flemming, State Department of Public Instruction, Madison; Milwaukee, November, 1922.
Wisconsin Association of Mathematics Teachers: Mrs. Jean Cowles Stoughton; W. W. Hart, University of Wisconsin, Madison; Milwaukee, first week in November, 1922.
Wisconsin Association of Modern Foreign Language Teachers: B. Q. Morgan, University of Wisconsin, Madison; C. F. Gillen, University of Wisconsin, Madison; Madison, April 31-May 1, 1922.
Wisconsin Association of Vocational School Directors: T. S. Rees, Racine; John B. Coleman, La Crosse; Milwaukee, January 11, 1922.
Wisconsin Colleges, Associated: Melvin A. Brannon, Beloit College, Beloit; H. P. Houghton, Marshall and Ilsley Bank, Milwaukee; Milwaukee.
Wisconsin History Teachers' Association: Laura E. Du Four, Racine; W. H. Hathaway, Riverside High School, Milwaukee; Milwaukee, November, 1922.
Wisconsin Music Teachers' Association: Theodore Winkler, Sheboygan; W. J. Meyer, Jefferson Studios, Milwaukee; Wausau, May, 1922.
Wisconsin Physical Education Association: J. C. Elsom, University of Wisconsin, Madison; Theresa M. Statz, State Normal School, Oshkosh; Milwaukee, November 4, 1921.
Wisconsin Teachers' Association: Thomas W. Boyce, Milwaukee; M. A. Bussewitz, Milwaukee; Milwaukee, November 9-11, 1922.

Wyoming:
Wyoming State Teachers' Association: Mrs. Katharina A. Morton, Cheyenne; J. C. McGlade, Casper; Cheyenne, October, 1922.

3. *City.*

Association of Women Principals of Public Schools of New York City: Jessie B. Colburn, 8 West One hundred and sixth Street; Loretto M. Rochester, 845 Lexington Avenue.
Boston Principals' Association: William B. Snow, English High School; Joseph F. Gould, Bigelow Schr Boston, October 5, 1921.
Boston Teachers' Club: Annie G. Scollard, 11 Bowditch Street, East Braintree, 84; Myrtle C. Dick 20 Whiting Street, Roxbury 19; September, 1921.
Brooklyn Teachers' Association: Frank J. Arnold, Public School 118; Emma E. Germany, Public Sc 118; September 19, 1921.
Chicago Principals' Club: Fred E. Smith, 3600 West Foster Avenue; Mary E. Fellows, 1922 Patte Avenue; September 23, 1921.
Chicago Teachers' Federation: Ida L. M. Fursman, 127 North Dearborn Street; Frances E. Harden, North Dearborn Street; September 10, 1921.
Cincinnati Schoolmasters' Club: C. M. Merry, Hughes High School; M. R. McElroy, Woodward High School.
Denver Teachers' Club: Margaret A. Smith, 1469 Williams Street; C. R. Christian, 3239 Franklin Stre

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Detroit Teachers' Association: Howard V. Hornung, Hotel Butler; Blanche E. Morris, 3780 Wight Street; October 3, 1921.
Educational Society of Baltimore: David E. Weglein, Baltimore City School Administration; William R. Flowers, Eastern High School; October, 1921.
Elementary teachers' association (Baltimore): Laura W. Mainster, 3915 Gwyn Oak Avenue, Mary Bell, 2837 St. Paul Street; September 14, 1921.
Federation of Teachers' Association of the City of New York: Isabel A. Ennis, 250 Washington Avenue, Brooklyn; Lucille Nicol, 445 Eastern Parkway, Brooklyn; New York, N. Y., September 15, 1921.
High School Men Teachers' Association of Philadelphia: R. B. Morris, Broad and Jackson Streets; J. H. Longacre, Forty-eighth and Walnut Streets; November 4, 1921.
High School Teachers' Association of Los Angeles City: Willis T. Newton, 219 South Burlington; G. W. Preston, 1143 Logan Street; September 19, 1921.
High School Teachers' Association of New York City: Harold E. Buttrick, Boys High School, Brooklyn; May E. Brockman.
Interborough Association of Women Teachers (New York City): Grace Strachan-Forsythe, 20 West Seventy-second Street; Helen A. McKeon, 564½ Clinton Street, Brooklyn.
Los Angeles City Teachers' Club: Ida Christine Iversen, 825 West Eighth Street; Marie L. Brandt, 1019 Florida Street; September 19, 1921.
Louisville (Ky.) Educational Association: W. C. Hatfield, 114 East Kentucky; Agnes Dickson, 1630 Lucia Avenue.
New Haven (Conn.) Teachers' League: Bernard J. McDonald, 95 Mansfield Street; Alice E. Wyman, 269 Dwight Street; September 27, 1921.
New York Academy of Public Education: William L. Felter, Girls' High School; T. Adrian Curtis, 139 Central Park South.
New York City Association of Teachers of English: John Avent, Julia Richman High School; Elinor Hastings, Washington Irving High School; September 17, 1921.
New York City Principals' Association: William Rabenort, Public School 55; Jessie B. Colburn, Public School 96; September 23, 1921.
New York Schoolmasters' Club: Francis H. J. Paul, Forest Hills Gardens; Matthew D. Quinn, 101 East Ninety-second Street; October 8, 1921.
New York Society for the Experimental Study of Education: John L. Tildsley, 500 Park Avenue; J. Carleton Bell, 1032 A Sterling Place, Brooklyn.
Oakland (Calif.) Schoolwomen's Club: Joyce Lobner, 2415 Telegraph; Myrtle Poole, 5216 Desmond Street; August, 1921.
Oakland (Calif.) Teachers' Association: Edgar E. Muller, 3909 Lynwood Avenue; H. D. Brasefield, Fremont High School; October, 1921.
Passaic (N. J.) Teachers' Association: Mary A. Dwyer, Madison Street; K. A. Dey, 9 Rutger Place; October, 2, 1921.
Philadelphia Teachers' Association: Lucy L. W. Wilson, Broad and Snyder Avenue; Emily M. Renshaw, 1415 South Fifty-eighth Street, September 2, 1921.
Pittsburgh Teachers' Association: John Adams, 1003 Bessemer Building; Ida Gealey, 1003 Bessemer Building; September 9, 1921.
Portland (Oreg.) Grade Teachers' Association: Anna Read Ockley Green School; Anne W. Biesen, Tudor Arms Apartment; September 14, 1921.
Public Education Association of Buffalo: Henry Ware Sprague, Erie County Bank Building; William P Haines, 122 Pearl Street.
Public Education Association of Chicago: C. M. Moderwell, 28 East Jackson Boulevard; Glen Edwards, 5486 Blackstone Avenue, May, 1922.
Public Education Association of the City of New York: Charles P. Howland, 61 Broadway; Howard W Nudd, 8 West Fortieth Street.
Public School Teachers' Association of Baltimore: Rozell Berryman: Euclid and Woodland Avenue; Minnie Daugherty, 637 West North Avenue: October 10, 1921.
Richmond (Va.) Elementary Teachers' Association: Ruth Redd, 1005 West Avenue; Miss Clara Somma, 2721 West Grace Street; October 12, 1921.
Richmond (Va.) Teachers' League: W. C. Locker, 811 Seminary Avenue: Emily C. Royall, 415 West Grace Street: October, 1921.
San Francisco Grade Teachers' Association: Mrs. E. L. Dacre, 42 Henry Street; Dorothy S. Farrell, 22 Henry Street; August, 1921.
Schoolmasters' Association of New York and Vicinity: Herbert E. Hawkes, Columbia University; Lloyd W. Johnson, Adelphi Academy, Brooklyn, New York City, October 21, 1921.
Schoolmaster's Club of Philadelphia: Albert W. Dudley, 6303 North Eleventh Street; Thomas J. Dobbins, 510 Midvale Avenue.
Teachers' Council (New York City): William J. McAuliffe, 372 East One hundred and ninety-fourth Street; Helen A. McKeon, 564 A Clinton Street, Brooklyn.
Utica (N. Y.) Teachers' Association: Vincent G. Brown, 10½ Lyon Place, New Hartford; Luella J. Thomas, 423 Court Street; September, 1921.

XXIV.—Learned and Civic Organizations.

The following list shows, first, the name of the organization; second, the name and address of the president; third the name and address of the secretary, fourth, the place and date of the next meeting.

American Academy of Arts and Letters: William Milligan Sloane, Princeton, N. J.; Robert Underwood Johnson, 15 West Eighty-first Street, New York, N. Y.; New York, N. Y., November 2, 1921.
American Academy of Medicine: William L. Estes, South Bethlehem, Pa.; T. W. Grayson, 3037 Jenkins Arcade, Pittsburgh, Pa.
American Academy of Political and Social Science: Leo S. Rowe, Pan-American Union, Washington, D. C., J. P. Lichtenberger, 307 Logan Hall University of Philadelphia, Philadelphia, Pa.; Philadelphia, Pa., May, 1922.
American Association for Community Organization: W. J. Norton, 542 Griswold Street, Detroit, Mich.; Raymond Clapp, 573 Electric Building, Cleveland, Ohio; Providence, R. I., June, 1922.
American Association for Labor Legislation: Thomas L. Chadbourne, 14 Wall Street, New York City, N. Y.; John B. Andrews, 131 East Twenty-third Street: December, 1921.
American Association for the Advancement of Science: E. H. Moore, University of Chicago, Chicago, Ill.; Burton E. Livingston, Smithsonian Institution, Washington, D. C.; Toronto, Canada, December 27–31, 1921.
American Association of Museums: Frederic Allen Whiting, Cleveland Museum of Art, Cleveland, Ohio; Harold L. Madison, Cleveland Museum of Natural History, Cleveland, Ohio: Buffalo, N. Y., May, 1922.

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American Chemical Society: Edgar F. Smith, University of Pennsylvania, Philadelphia, Pa.; Charles L. Parsons, 1709 G Street NW., Washington, D. C.; New York, N. Y., September 6–10, 1921.

American Child Hygiene Association: Henry L. K. Shaw, 361 State Street, Albany, N. Y.; H. F. Helmholz, Mayo Clinic, Rochester, Minn.; New Haven, Conn., November 2–5, 1921.

American Civic Association: J. Horace McFarland, Harrisburg, Pa.; Harlean James, 905 Union Trust Building, Washington, D. C.; Chicago, Ill., November 13–17, 1921.

American Country Life Association: Kenyon L. Butterfield, Amherst, Mass.; Charles J. Galpin, Washington, D. C.; New Orleans, La., November 10–12, 1921.

American Economic Association: Jacob H. Hollander, Johns Hopkins University, Baltimore, Md.; Ray R. Westerfield, Yale Station, New Haven, Conn.; Pittsburgh, Pa., last week December, 1921.

American Forestry Association: Charles Lathrop Pack, Lakewood, N. J.; Percival Sheldon Ridsdale, 1214 Sixteenth Street NW., Washington, D. C.

American Genetic Association: David Fairchild, Box 354, Pennsylvania Avenue Station, Washington, D. C.; George M. Rommel, Box 354, Pennsylvania Avenue Station, Washington, D. C.; Washington, D. C., January 12, 1922.

American Geographical Society: John Greenough, Broadway at One hundred and fifty-sixth Street, New York, N. Y.; Isaiah Bowman, Broadway at One hundred and fifty-sixth Street, New York, N. Y., November 22, 1921.

American Historical Association: Jules Jusserand, French Embassy, Washington, D. C.; John Spencer Bassett, Northampton, Mass.; St. Louis, Mo., December 27, 1921.

American Library Association: Asariah S. Root, Oberlin College Library, Oberlin, Ohio; Carl H. Milam, 78 East Washington Street, Chicago, Ill.; Detroit, Mich., June 26–July 1, 1922.

American Mathematical Society: G. A. Bliss, University of Chicago, Chicago, Ill.; R. G. D. Richardson, Brown University, Providence, R. I.; Wellesley, Mass., September 7–9, 1921.

American Medical Association: George Edmund de Schweinitz, 1705 Walnut Street, Philadelphia, Pa.; Alexander R. Craig, 535 North Dearborn Street, Chicago, Ill.; St. Louis, Mo.

American Philological Association: Walton Brooks McDaniel, University of Pennsylvania, Philadelphia, Pa.; Clarence P. Bill, Adelbert College, Cleveland, Ohio; Ann Arbor, Mich., December 28–30, 1921.

American Philosophical Association, Eastern Division: W. H. Sheldon, Yale University, New Haven, Conn.; A. H. Jones, Brown University, Providence, R. I.; Vassar College, Poughkeepsie, N. Y., December 28–31, 1921.

American Philosophical Society: William B. Scott, Princeton, N. J.; I. Minis Hays, 104 South Fifth Street, Philadelphia, Pa.; Philadelphia, Pa., April 20–22, 1922.

American Political Science Association: Leo S. Rowe, Pan American Union, Washington, D. C.; Frederic A. Ogg, University of Wisconsin, Madison, Wis.; Pittsburgh, Pa., December 27–29, 1921.

American Psychological Association: Margaret F. Washburn, Vassar College, Poughkeepsie, N. Y.; Edwin G. Boring, Clark University, Worcester, Mass.; Princeton, N. J., December 28–30, 1921.

American Public Health Association: M. P. Ravenel, University of Missouri, Columbia, Mo.; A. W. Hedrich, 370 Seventh Avenue, New York, N. Y.; New York, N. Y., November 14–18, 1921.

American Social Hygiene Association: Hermann M. Biggs, 370 Seventh Avenue, New York, N. Y.; Donald R. Hooker, Baltimore, Md.; New York, N. Y., November, 1921.

American Society for Thrift: S. W. Straus, Straus Building, New York, N. Y.; Henry R. Daniel, 9 East Forty-sixth Street, New York, N. Y.

American Sociological Society: Edward Cary Hayes, University of Illinois, Urbana, Ill.; Ernest W. Burgess, University of Chicago, Chicago, Ill.; Pittsburgh, Pa., December 27–29, 1921.

American Statistical Association: Carroll W. Doten, 222 Charles River Road, Cambridge, Mass.; Robert E. Chaddock, Columbia University, New York, N. Y.; Pittsburgh, Pa., December 27–30, 1921.

Association of American Geographers: Ellen Churchill Semple, 509 West Ormsby Avenue, Louisville, Ky.; Richard E. Dodge, Storrs, Conn.; Washington, D. C., December 29–31, 1921.

Botanical Society of America: Charles E. Allen, University of Wisconsin, Madison, Wis.; J. R. Schramm, 110 Stewart Avenue, Ithaca, N. Y.; Toronto, Canada, December 27–31, 1921.

Child Conservation League of America: Winfield Scott Hall, 3136 Ivison Avenue, Berwyn, Ill.; Mrs. Mary Laux Beckwith, Room 1118, Woman's Temple, Chicago, Ill.; Chicago, Ill., March 16, 1922.

Child Health Organization of America: L. Emmett Holt, 155 West Fifty-eighth Street, New York, N. Y.; Frederick Peterson, Hotel Chatham, New York, N. Y.; October, 1921.

Farm Women's National Congress: Mrs. Fannie M. Klinck, Clarkville, Iowa; Mrs. Nettie Dennison, Vermilion, S. D.

Geological Society of America: James F. Kemp, Columbia University, New York, N. Y.; E. O. Hovey, American Museum of Natural History, New York, N. Y.; Amherst, Mass., December 28–30, 1921.

Inter-Racial Council: Secretary, M. I. Pupin, Columbia University, New York, N. Y.

Jewish Agricultural and Industrial Aid Society: Cyrus L. Sulzberger, 516 West End Avenue, New York, N. Y.; Eugene S. Benjamin, 1019 Madison Avenue, New York, N. Y.

Mathematical Association of America: G. A. Miller, University of Illinois, Urbana, Ill.; W. D. Cairns, Oberlin College, Oberlin, Ohio; Toronto, Canada, December, 1921.

Military Training Camps Association of the United States: Archibald G. Thacher, 19 West Forty-fourth Street, New York, N. Y.; Arthur F. Cosby, 19 West Forty-fourth Street, New York, N. Y.; New York, N. Y., July, 1921.

Modern Language Association of America: William Guild Howard, 39 Kirkland Street, Cambridge, Mass.; Carleton Brown, Bryn Mawr College, Bryn Mawr, Pa.; Baltimore, Md., December 28–30, 1921.

Modern Language Teachers' Association of the Central West and South: A. R. Hohlfeld, 124 Breese Terrace, Madison, Wis.; C. H. Handschin, Oxford, Ohio; Chicago, Ill., May, 1922.

National Academy of Sciences: Charles Doolittle Walcott, Smithsonian Institution, Washington, D. C.; Charles Greeley Abbot, Smithsonian Institution, Washington, D. C.

National Agricultural Society: Howard R. Smith, Live Stock Exchange Building, Chicago, Ill.; Robert Scoville, Hartford, Conn.

National Association of Audubon Societies: T. Gilbert Pearson, 1974 Broadway, New York, N. Y.; William P. Wharton, Groton, Mass.; New York, N. Y., January, 1922.

National Child Welfare Association: William H. Wadhams, 48 East Seventy-eighth Street, New York, N. Y.; Charles F. Powlison, 70 Fifth Avenue, New York, N. Y.; New York, N. Y., January 9, 1922.

National Civic Federation: Alton B. Parker, 61 Broadway, New York, N. Y.; D. L. Cease, Cleveland, Ohio.

National Community Board: Henry E. Jackson, 1516 H Street NW., Washington, D. C.; Oliver P. Newman, 1516 H Street NW., Washington, D. C.; Washington, D. C., April 13, 1922.

National Conference of Social Work: Robert W. Kelso, 46 Cornhill, Boston, Mass.; William Hammond Parker, 25 East Ninth Street, Cincinnati, Ohio; Providence, R. I., June, 1922.

National Economic League: Secretary, J. W. Beatson, 6 Beacon Street, Boston, 9, Mass.

National Efficiency Society: Melvil Dewey, Lake Placid Club, N. Y.; H. F. J. Porter, 522 Fifth Avenue, New York, N. Y.; New York, N. Y., January, 1922.

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National Geographic Society: Gilbert Grosvenor, National Geographic Society, Washington, D. C.; O. P. Austin, National Geographic Society, Washington, D. C.; Washington, D. C.
National Historical Society: Frank Allaben, 37 West Thirty-ninth Street, New York, N. Y.; Mabel T. R. Washburn, 37 West Thirty-ninth Street, New York, N. Y.
National Institute of Arts and Letters: Robert Grant, 211 Bay State Road, Boston, Mass.; Jefferson B. Fletcher, Columbia University, New York, N. Y.; New York, N. Y., January, 1922.
National Institute of Social Sciences: Secretary, Jessie Knight, Rio de Janiero, Brazil, S. A.
National Municipal League: H. M. Waite, 105 West Fortieth Street, New York, N. Y.; H. W. Dodds, 261 Broadway, New York, N. Y.; Chicago, Ill., November 16–18, 1921.
National Research Council: John C. Merriam, Carnegie Institution, Washington, D. C.; Vernon Kellogg, 1701 Massachusetts Avenue NW., Washington, D. C.
National Safety Council: C. P. Tolman, 111 Broadway, New York, N. Y.; Sidney J. Williams, 168 North Michigan Avenue, Chicago, Ill.; Boston, Mass., September 26–30, 1921.
National Security League: Charles D. Orth, 17 East Forty-ninth Street, New York, N. Y.; E. L. Harvey, 17 East Forty-ninth Street, New York, N. Y.; New York, N. Y., September 17, 1921.
Pan American Society of the United States: John Bassett Moore, 267 West Seventy-third Street, New York, N. Y.; John S. Prince, 15 Broad Street, New York, N. Y.; New York, February 13, 1921.
Society for the Promotion of Agricultural Science: Burt L. Hartwell, Kingston, R. I.; Jacob G. Lipman, New Brunswick, N. J.; New Orleans, La., November 7–8, 1921.
Southern Cooperative League: Philander P. Claxton, University of Alabama, University, Ala.; J. E. McCulloch, 817 Fourteenth Street NW., Washington, D. C.; Chattanooga, Tenn., November 6–9, 1921.
Woman's National Farm and Garden Association: Mrs. Russell Tyson, 1728 Stevens Building, Chicago, Ill.; Mrs. P. L. Richtmyer, 1728 Stevens Building, Chicago, Ill.; spring, 1922.
Workers' Educational Bureau of America: James H. Maurer, Harrisburg, Pa.; Spencer Miller, 465 West Twenty-third Street, New York, N. Y.; 465 West Twenty-third Street, New York, N. Y., August 20, 1921.

XXV.—National Congress of Mothers and Parent-Teacher Associations.

The officers of the National Congress of Mothers and Parent-Teacher Associations are: President, Mrs. Milton P. Higgins, 228 West Street, Worcester, Mass.; Executive Secretary, Mrs. Arthur Watkins, 1201 Sixteenth Street NW., Washington, D. C. Annual meeting, May 8–12, 1922, Takoma, Wash.

Name.	President.	Secretary.	Place of meeting.
Alabama	Mrs. H. S. Doster, Prattville.	Mrs. B. F. Hardeman, 404 Washington Ave.	
Arizona	Mrs. John Langdon, Clemenceau.	Mrs. R. F. Washburn, 741 W. Pierce St., Phoenix.	Phoenix, March 23, 24, 25, 1922.
California	Mrs. Harry J. Ewing, 70 East William St., San Jose.	Mrs. John F. Sheehan, 117 Alpine Terrace, San Francisco.	San Jose, July 12, 1921.
Colorado	Mrs. Richard Crawford Campbell, 1075 Pennsylvania St., Denver.	Mrs. C. E. Roe, 517 Kittredge Building, Denver.	Second Thursday of each month.
Connecticut	Mrs. E. C. Littlefield, 448 Orange St., New Haven.		
Delaware	Mrs. John B. Cleaver, Middletown.		
District of Columbia	Mrs. G. S. Rafter, 1774 Kilbourne Place, Washington, D. C.		
Florida	Mrs. Arthur C. Cummer, Jacksonville.		
Georgia	Mrs. C. A. Hilbun, 175 Rivoli, Macon.		
Idaho	Mrs. S. J. Ewen, Boise.		
Illinois	Mrs. Wm. F. Young, 220 Myrtle St., Winnetka,	Mrs. Julius Floto, 32 North Mayfield Ave., Chicago.	Chicago, May, 1922.
Indiana		Mrs. Rollin J. Cheney, 1004 Vincennes St., New Albany.	Indianapolis, Oct. 20–22, 1921.
Iowa	Miss Carolyn E. Forgrave, Perry.	Mrs. H. G. Drake, 1405 23d St., Des Moines.	Mason City, Oct. 12, 13, 1921
Kansas	Mrs. J. K. Codding, Lansing.	Miss Lillian Kuntz, 810 S. 2nd, Leavenworth.	Wichita, between Mar. 15 and 25, 1922.
Kentucky	Mrs. George C. Weldon, Eastleigh, Louisville.	Miss Elizabeth P. Stouffer, Apt. 22, Wessinger-Gaulbert, Louisville.	Louisville, April, 1922.
Maine	Mrs. Frederick P. Abbott, Saco.	Miss Lydia R. Rideout, Saco.	June, 1922.
Maryland	Mrs. Harry E. Parkhurst, 1410 Park Ave., Baltimore.		
Massachusetts	Mrs. Edward C. Mason, 8 Grove St., Winchester.	Mrs. H. Y. Neal, Packard Ave., Tufts College.	Springfield, Oct. 13, 14, 15, 1921.
Michigan	Mrs. E. W. Kiefer, Port Huron.		
Mississippi	Mrs. H. P. Hughes, Gulf Park, Gulfport.	Mrs. Ernest Bennett, Natchez.	Jackson, May 1, 1922.
Missouri	Mrs. William Ullmann, 521 E. Walnut St., Springfield.	Mrs. A. B. Sherwood, 412 Harrison, Springfield.	Springfield, July 19.
Montana	Mrs. E. C. Elliott, Helena.		
New Hampshire	Mrs. C. L. Simmers, Durham		

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XXV.—National Congress of Mothers and Parent-Teacher Associations—Continued.

Name.	President.	Secretary.	Place of meeting.
New Jersey	Mrs. D. W. Cooper, Montclair.	Mrs. Wm. F. Little, 110 Elm Ave., Rahway.	Trenton, Nov. 9 and 10, 1921.
New Mexico	Mrs. Ruth C. Miller, Santa Fe.	Mrs. Jessie Gray, Hot Springs.	Albuquerque, Thanksgiving week.
New York	Mrs. M. C. Holley, 175 Locust St., Lockport.	Mrs. F. D. Bidwell, 55 Manning Blvd., Albany.	Rochester, Oct. 3-7, 1921.
North Carolina	Mrs. Joseph Garibaldi, 214 Park St., Charlotte.		
North Dakota	Mrs. F. B. Naylor, Larimore.	Albert H. Yoder, Univ. of North Dakota, Grand Forks.	
Ohio	Mrs. S. M. Williams, 1534 Lakewood Ave., Lima.	Mrs. Charles Axline, No. 8, The Priscilla, Cincinnati.	Warren, Oct. 12, 14, 15, 1921.
Oregon	Mrs. J. F. Hill, 218 Knott St., Portland.	Mrs. J. F. Risley, R. R., Milwaukee.	Pendleton, May 11-14, 1921.
Pennsylvania	Mrs. E. E. Kiernan, Somerset.	Mrs. C. T. Saylor, Rockwood.	Altoona, Oct. 5, 6, 7.
Rhode Island	Mrs. E. S. Moulton, 96 Alumni Ave., Providence.	Mrs. James J. McCabe, 130 Messer St., Providence.	Providence, April.
South Dakota	Mrs. H. R. Kenaston, Bonesteel.	Mrs. W. S. Hill, Mitchell.	
Tennessee	Mrs. E. Crutcher, 817 Lischey Ave., Nashville.	Mrs. G. M. Whittemore, 1501 Ashwood Ave., Nashville.	Paris, last week in October.
Texas	Mrs. S. M. N. Marrs, Capitol Station, Austin.	Mrs. Noyes D. Smith, 801 W. 21st St., Austin.	San Antonio, some time in November.
Utah	Mrs. John E. Dooley, 506 E. S. Temple St., Salt Lake City.		
Vermont	Mrs. P. W. Freeman, Rutland.		
Virginia	Mrs. Harry Semones, 601 McBain Bldg., Roanoke.	Mrs. R. B. Embree, Buena Vista.	April, 1922.
Washington	Mrs. C. A. Varney, Yakima	Mrs. M. A. Peacock, Yakima	Everett, April or May, 1922.
Wisconsin	Mrs. George N. Trumper, 734 Prairie Ave., Kenosha.		

XXVI—Educational Periodicals

List of American educational periodicals currently received by the library of the Bureau of Education.

[List of abbreviations: bm.=bimonthly; ir.=irregular; m.=monthly; q.=quarterly; sm.=semimonthly; w.=weekly.]

Alabama School Journal. 130 South Nineteenth Street, Birmingham. 10 nos.
American Child. 105 East Twenty-second Street, New York, N. Y. q.
American Cookery. 221 Columbus Avenue, Boston, Mass. 10 nos.
American Education. 50 State Street, Albany, N. Y. 10 nos.
American Journal of School Hygiene. Worcester, Mass. q.
American Oxonian. 18 North Main Street, Concord, N. H. q.
American Penman. 30 Irving Place, New York, N. Y. m.
American Physical Education Review. Springfield, Mass. 10 nos.
American School. P. O. Box 650, Milwaukee, Wis. m.
American School Board Journal. 354 Milwaukee Street, Milwaukee, Wis. m.
American Schoolmaster. Ypsilanti, Mich. 10 nos.
American Teacher. 70 Fifth Avenue, New York, N. Y. 10 nos.
Arizona Teacher and Home Journal. Phoenix. 10 nos.
Arkansas Teacher. Little Rock. 10 nos.
Artisan. State Trade School, Bridgeport, Conn. q.
Boston Teachers' News-Letter. Ford Building, Boston. 10 nos.
Bulletin of High Points in the Work of the High Schools of New York City. Board of Education Building New York. 10 nos.
Business Educator. Columbus, Ohio. 10 nos.
California. *See* California Blue Bulletin; Los Angeles School Journal; Sierra Educational News; University of California Chronicle; Western Journal of Education.
Catholic Educational Review. Washington, D. C. 10 nos.
Catholic School Journal. Milwaukee, Wis. 10 nos.
Chicago Schools Journal. Chicago Normal College, Chicago. 10 nos.
Child-Welfare Magazine. 41 North Queen Street, Lancaster, Pa. m.
Christian Education. 19 South La Salle Street, Chicago, Ill. m.
Christian Education Monthly. Nashville, Tenn. m.
Christian Educator. Washington, D. C. 10 nos.
Christian Educator. 420 Plum Street, Cincinnati, Ohio. 10 nos.
Christian Student. 150 Fifth Avenue, New York, N. Y. q.

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Church School. 150 Fifth Avenue, New York, N. Y. m.
Classical Journal. University of Chicago Press, Chicago, Ill. 9 nos.
Classical Weekly. Barnard College, New York, N. Y. w. from October to May.
Colorado School Journal. Denver. 10 nos.
Common Ground. Somerville, Mass. q.
Community and Tourist Magazine. Duluth, Minn. m.
Community Center. Mount Morris, Ill. ir.
Connecticut. *See* Artisan; Connecticut Schools.
Connecticut Schools. Hartford. 10 nos.
District of Columbia. *See* Catholic Educational Review; Christian Educator; Educational Record; Junior Red Cross News; Journal of the National Education Association; Quarterly Magazine of the Southern Industrial Educational Association; School Life; Volta Review.
Education. 120 Boylston Street, Boston, Mass. 10 nos.
Education Bulletin. Trenton, N. J. 10 nos.
Educational Administration and Supervision. Warwick & York (Inc.), Baltimore, Md. 10 nos.
Educational Film Magazine. 33 West Forty-second Street, New York, N. Y. 10 nos.
Educational Foundations. 31–33 East Twenty-seventh Street, New York, N. Y. 10 nos.
Educational Issues. 801–2 Occidental Building, Indianapolis, Ind. m.
Educational Record. 818 Connecticut Avenue, Washington, D. C. q.
Educational Review. Doubleday, Page & Company, Garden City, N. Y. 10 nos.
Educator-Journal. 610 Lemcke Building, Indianapolis, Ind. m.
Elementary School Journal. University of Chicago, Chicago, Ill. 10 nos.
Engineering Education. Bulletin of the Society for the Promotion of Engineering Education. Lancaster, Pa. 10 nos.
English Journal. University of Chicago Press, Chicago, Ill. 10 nos.
English Leaflet. Concord, N. H. 7 nos.
General Science Quarterly. Salem, Mass. q.
Georgia. *See* High School Quarterly; National Note-book Quarterly; School and Home.
Harvard Graduates' Magazine. 99 State Street, Boston, Mass. q.
Hawaii Educational Review. Honolulu. 10 nos.
High School Journal. Chapel Hill, N. C. 8 nos.
High School Quarterly. Athens, Ga. q.
Historical Outlook. McKinley Publishing Co., Philadelphia, Pa. 9 nos.
Home and School Guest. Stroudsburg, Pa. q.
Hospital School Journal. Farmington, Mich. bm.
Idaho Teacher. Boise, Iowa. 10 nos.
Illinois. *See* Chicago Schools Journal; Christian Education; Classical Journal; English Journal; Illinois Association of Teachers of English Bulletin; Illinois Teacher; Journal of Educational Method; Journal of Educational Research; Manual Training Magazine; Modern Language Journal; Religious Education; School and Home Education; School Century; School News and Practical Educator; School Review; School Science and Mathematics; University Record; Visual Education.
Illinois Association of Teachers of English Bulletin. Urbana. 8 nos.
Illinois Teacher. Bloomington. 10 nos.
Indiana. *See* Educational Issues; Educator-Journal.
Industrial-Arts Magazine. Bruce Publishing Co., Milwaukee, Wis. m.
Inter-Mountain Educator. Missoula, Mont. 10 nos.
Iowa. *See* Junior High Clearing House; Midland Schools; School Music.
Johns Hopkins Alumni Magazine. Baltimore, Md. q.
Journal of Applied Psychology. Worcester, Mass. q.
Journal of Education. 6 Beacon Street, Boston, Mass. w.
Journal of Educational Psychology. Warwick & York (Inc.), Baltimore, Md. 10 nos.
Journal of Educational Method. World Book Company, Yonkers, N. Y. 10 nos.
Journal of Educational Research. Public School Publishing Co., Bloomington, Ill. 10 nos
Journal of Experimental Psychology. Princeton, N. J. bm.
Journal of Geography. State Teachers College, Mankato, Minn. 9 nos.
Journal of Home Economics. 1211 Cathedral Street, Baltimore, Md. m.
Journal of the National Education Association. 1201 Sixteenth Street NW., Washington, D. C. 10 nos.
Journal of the New York Teachers' Association. Rochester. 8 nos.
Junior High Clearing House. Sioux City, Iowa. 8 nos.
Junior Red Cross News. Washington, D. C. 9 nos.
Kansas. *See* Kansas Teacher; Teaching.
Kansas Teacher. 923 Kansas Avenue, Topeka. m.
Kentucky. *See* Kentucky Education Association Bulletin; Kentucky High School Quarterly; Southern School Journal.
Kentucky Education Association Bulletin. Louisville. m.
Kentucky High School Quarterly. Lexington. q.
Kindergarten and First Grade. Springfield, Mass. 10 nos.
Kindergarten-Primary Magazine. Manistee, Mich. bm.
Los Angeles School Journal. 422–23 Chamber of Commerce Building, Los Angeles, Calif. w.
Louisiana. *See* Southern School Work.
Maine State School Bulletin. Augusta. 10 nos.
Manual Training Magazine. Peoria, Ill. m.
Maryland. *See* Educational Administration and Supervision; Johns Hopkins Alumni Magazine; Journal of Educational Psychology; Journal of Home Economics; Mother and Child.
Massachusetts. *See* American Cookery; American Journal of School Hygiene; American Physical Education Review; Boston Teachers' News-Letter; Common Ground; Education; English Leaflet; General Science Quarterly; Harvard Graduates' Magazine; Journal of Applied Psychology; Journal of Education; Kindergarten and First Grade; Pedagogical Seminary; Popular Educator; Primary Education; School Arts Magazine.
Mathematics Teacher. Lancaster, Pa. q.
Mental Hygiene. 27 Columbia Street, Albany, N. Y. q.
Michigan. *See* American Schoolmaster; Hospital School Journal; Kindergarten-Primary Magazine; Moderator-Topics.
Middle-West School Review, Omaha, Nebr. 10 nos.
Midland Schools. Des Moines, Iowa. 10 nos.
Mind and Body. New Ulm, Minn. m.
Minnesota. *See* Community and Tourist Magazine; Journal of Geography; Mind and Body; Minnesota Teacher; National School Building Journal; National School Digest.
Minnesota Teacher. Minneapolis. q.

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Mississippi Educational Advance. Jackson. 10 nos.
Missouri. *See* Missouri School Journal; Rural School Messenger; School and Community.
Missouri School Journal. Jefferson City. m.
Moderator-Topics. Lansing, Mich. w. except July and August.
Modern Language Journal. 7650 Saginaw Avenue, Chicago, Ill. 8 nos.
Montana. *See* Inter-Mountain Educator.
Modern Rural School and Home Magazine. Oklahoma City, Okla. m.
Mother and Child. 1211 Cathedral Street, Baltimore, Md. bm.
National Association of Corporation Training Bulletin. 130 East Fifteenth Street, New York, N. Y. m.
National Note-book Quarterly. Augusta, Ga. q.
National School Digest. 1405 University Avenue SE., Minneapolis, Minn. 9 nos.
Nature-Study Review. Ithaca, N. Y. 9 nos.
Nebraska Teacher. Lincoln. 10 nos. Nebraska. *See* Middle-West School Review; Nebraska Teacher.
Nevada Educational Bulletin. Carson City. 10 nos.
New Hampshire. *See* American Oxonian.
New Jersey. *See* Education Bulletin; Journal of Experimental Psychology; Newark School Bulletin; School News; Training School Bulletin.
New York. *See* American Child; American Education; American Penman; American Teacher; Bullletin of High Points in the Work of the High Schools of New York City; Christian Student; Church School; Classical Weekly; Educational Film Magazine; Educational Foundations; Educational Review; Journal of the New York State Teachers' Association; Mental Hygiene; National Association of Corporation Training Bulletin; Nature-Study Review; Normal Instructor and Primary Plans; Playground; School and Community; School and Home; School and Society; School Magazine; Teachers College Record; Teacher's Monographs; Ungraded; Vocationist.
Newark School Bulletin. Newark, N. J. 10 nos.
Normal Instructor and Primary Plans. Dansville, N. Y. 10 nos.
North Carolina. *See* High School Journal; North Carolina Education; Training School Quarterly.
North Carolina Education. Raleigh. 10 nos.
North Dakota. *See* Quarterly Journal of the University of North Dakota.
Northwest Journal of Education. Seattle, Wash. 10 nos.
Ohio. *See* Business Educator; Christian Educator; Ohio Educational Monthly; Ohio History Teachers' Journal; Ohio State University Monthly; Ohio Teacher; School Index; Sunday School Journal.
Ohio Educational Monthly. Columbus, Ohio. m.
Ohio History Teachers' Journal. Columbus. q.
Ohio State University Monthly. Columbus. q.
Ohio Teacher. Columbus. m.
Oklahoma. *See* Modern Rural School and Home Magazine; Oklahoma School Herald; Oklahoma Teacher.
Oklahoma School Herald. Tulsa. 10 nos.
Oklahoma Teacher. Oklahoma City. 10 nos.
Oregon Teachers' Monthly. Salem. 10 nos.
Pedagogical Seminary. Worcester, Mass. q.
Pennsylvania. *See* Child-Welfare Magazine; Engineering Education; Historical Outlook; Home and School Guest; Mathematics Teacher; Pennsylvania School Journal; Pittsburgh School Bulletin; Psychological Clinic.
Pennsylvania School Journal. Lebanon. 10 nos.
Philippine Education. Manila. 10 nos.
Philippine News Review. Manila. sm.
Pittsburgh School Bulletin. 1003 Bessemer Building, Pittsburgh, Pa. 10 nos.
Playground. 1 Madison Avenue, New York, N. Y. m.
Popular Educator. 50 Bromfield Street, Boston, Mass. 10 nos.
Porto Rico School Review. San Juan. 10 nos.
Primary Education. 50 Bromfield Street, Boston, Mass. 10 nos.
Progressive Teacher. Morristown, Tenn. 10 nos.
Psychological Clinic. Woodland Avenue and Thirty-sixth Street, Philadelphia, Pa. 9 nos.
Quarterly Journal of Speech Education. Ann Arbor, Mich. q.
Quarterly Journal of the University of North Dakota. University. q.
Quarterly Magazine of the Southern Industrial Educational Association. Washington, D. C. q.
Religious Education. 1440 East Fifty-seventh Street, Chicago. Ill. bm.
Rural Education. Aberdeen, S. Dak. m.
Rural School Messenger. Kirksville, Mo. q.
School. 154 Fifth Avenue, New York, N. Y. w.
School and Community. Buffalo, N. Y. sm.
School and Community. Columbia, Mo. 10 nos.
School and Home. Atlanta, Ga. m.
School and Home. Ethical Culture School, New York, N. Y. 3 nos.
School and Home Education. Bloomington, Ill. 10 nos.
School and Society. Garrison, N. Y. w.
School Arts Magazine. 25 Foster Street, Worcester, Mass. 10 nos.
School Century. Oak Park, Ill. 10 nos.
School Index. Cincinnati, Ohio. w.
School Life. Bureau of Education, Washington, D. C. m.
School Magazine. Buffalo, N. Y. m.
School Music. Keokuk, Iowa. bm. except July and August.
School News. Newark, N. J. m.
School News and Practical Educator. Taylorville, Ill. 10 nos.
School Review. University of Chicago, Chicago, Ill. 10 nos.
School Science and Mathematics. Mount Morris, Ill. 9 nos.
Sierra Educational News. San Francisco, Calif. 10 nos.
South Carolina Education. Columbia. 8 nos.
South Dakota. *See* Rural Education; South Dakota Educator.
South Dakota Educator. Mitchell. 10 nos.
Southern School Journal. Louisville, Ky. m.
Southern School Work. Alexandria, La. 10 nos.
Southern Workman. Hampton, Va. m.
Southwestern School Review. Austin, Tex. 6 nos.
Sunday School Journal. Methodist Book Concern, Cincinnati, Ohio. m.
Teachers College Record. Teachers College, Columbia University, New York, N. Y. bm. except July.

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Teacher's Monographs. 8 East Fifteenth Street, New York, N. Y.
Teaching. Emporia, Kans. bm.
Tennessee. *See* Christian Education Monthly; Progressive Teacher.
Texas. *See* Southwestern School Review; Texas Outlook; Texas School Journal.
Texas Outlook. Fort Worth. 11 nos.
Texas School Journal. Dallas and Austin. 10 nos.
Training School Bulletin. Vineland, N. J. 10 nos.
Training School Quarterly. Greenville, N. C. q.
Ungraded. 500 Park Avenue, New York, N. Y. 9 nos.
University of California Chronicle. Berkeley. q.
University Record. University of Chicago Press, Chicago, Ill. q.
Utah Educational Review. Salt Lake City. 10 nos.
Virginia. *See* Southern Workman; Virginia Journal of Education; Virginia Teacher.
Virginia Journal of Education, Richmond. 10 nos.
Virginia Teacher. Normal Station, Harrisonburg. m.
Visual Education. 327 South La Salle Street, Chicago, Ill. 10 nos.
Vocationist. Oswego, N. Y. q.
Volta Review. Thirty-fifth Street and Volta Place, Washington, D. C. m.
Washington. *See* Northwest Journal of Education; Washington Education Journal.
Washington Education Journal. Seattle. 10 nos.
Western Journal of Education. 1111–12 Hearst Building, San Francisco, Calif. m.
Wisconsin. *See* American School; American School Board Journal; Catholic School Journal; Industrial Arts Magazine; Wisconsin Educational Horizon; Wisconsin Journal of Education.
Wisconsin Educational Horizon. Madison. bm.
Wisconsin Journal of Education. Madison. 10 nos.
Wyoming Educational Bulletin. Cheyenne. m.

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DEPARTMENT OF THE INTERIOR
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BULLETIN, 1921, No. 49

MONTHLY RECORD OF CURRENT EDUCATIONAL PUBLICATIONS

OCTOBER, 1921

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1921

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MONTHLY RECORD OF CURRENT EDUCATIONAL PUBLICATIONS.

Compiled by the Library Division, Bureau of Education.

CONTENTS.—Proceedings of associations—Educational history and biography—Curren. educational conditions—Educational theory and practice—Educational psychology; Child study—Educational tests and measurements—Special methods of instruction—Special subjects of curriculum—Kindergarten and primary school—Rural life and culture—Rural education—Secondary education—Teacher training—Teachers' salaries and professional status—Higher education—School administration—School management—School buildings and grounds—School hygiene and sanitation—Sex hygiene—Physical training—Play and recreation—Social aspects of education—Child welfare—Moral education—Religious and church education—Manual and vocational training—Vocational guidance—Workers' education—Agriculture—Home economics—Professional education—Civic education—Americanization—Education of women—Negro education—Education of deaf—Exceptional children—Education extension—Libraries and reading—Bureau of Education: Recent publications.

NOTE.

The record comprises a general survey in bibliographic form of current educational literature, domestic and foreign, received during the monthly period preceding the date of publication of each issue. An index to the record is provided for each year, making the series available for permanent use as an annual bibliography of education. The index to the 10 numbers of the record, February, 1920–January, 1921, covering the literature of 1920, is issued as Bulletin, 1921, no. 31.

This office can not supply the publications listed in this bulletin, other than those expressly designated as publications of the Bureau of Education. Books, pamphlets, and periodicals here mentioned may ordinarily be obtained from their respective publishers, either directly or through a dealer, or, in the case of an association publication, from the secretary of the issuing organization. Many of them are available for consultation in various public and institutional libraries.

Publications intended for inclusion in this record should be sent to the library of the Bureau of Education, Washington, D. C.

PROCEEDINGS OF ASSOCIATIONS.

1192. **Association of colleges and secondary schools of the Southern states.** Proceedings of the twenty-fifth annual meeting, Chattanooga, Tenn., December 2, 3, 1920. Tulane university press, New Orleans [1921?] 114 p. 8°. (Edward A. Bechtel, secretary, Tulane university, New Orleans, La.)

Contains: 1. J. T. Wright: Character education in relation to citizenship, p. 40–53. 2. J. P. McCallie: The need of moral and religious training in school and college and how to meet it, p. 53–67. 3. G. F. Zook: The problem of teacher supply, p. 74–84. 4. A. Bezint: Modern methods of teaching elementary French, p. 97–110.

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1193. **California high school teachers' association. Proceedings, 1921.** Sierra educational news, August 1921.

Contains: 1. Will C. Wood: The demands of changing conceptions of government on education, p. 10–17. 2. J. R. McKillop: How to secure an active community interest in the school, p. 26–29. 3. E. D. Shurter: Americanization and the schools, p. 29–32. 4. Nicholas Ricciardi: Making the public school product marketable, p. 52–56.

1194. **Michigan schoolmasters' club. Journal of the . . . fifty-sixth meeting held in Ann Arbor, March 31, April 1, 1921.** Ann Arbor, Michigan. [1921] 73 p. 8°. (Louis P. Jocelyn, secretary, Ann Arbor, Mich.)

Contains: 1. R. L. Baldwin: Function of music in education, p. 7–17. 2. W. D. Reeve: Homogeneous classification of high school children according to ability shown on psychological tests, p. 18–26. 3. W. G. Smeaton: The foundation for more work in chemistry, p. 27–34.

1195. **New Jersey state teachers' association. Annual report and proceedings of the 66th annual meeting . . . Atlantic City, N. J., December 28–30, 1920.** Camden, N. J., Sinnickson Chew & sons co., 1921. 247 p. 8°. (H. J. Neal, secretary, Collingswood, N. J.)

Contains: 1. A. E. Winship: Making the public schools the public's school. p. 33–39. 2. J. R. P. Brock: Work of the colored schools, p. 43–47. 3. L. L. Jackson: Getting our bearings in high school work, p. 57–62. 4. A. E. Winship: A series of projects that developed a community, p. 68–72.

1196. **North Carolina teachers' assembly. Proceedings and addresses of the thirty-seventh annual session . . . at Asheville, November 24–26, 1920.** Raleigh, Mitchell printing company, 1921. 84 p. 8°. (A. T. Allen, secretary, Raleigh, N. C.)

Contains: 1. Edwin Mims: The new challenge to teachers of America, p. 28–33. 2. Nellie Walker: Modern practices in our primary grades, p. 41–45. 3. Jamie Bryan: Motivated study periods in the primary grades, p. 45–48. 4. L. A. Williams: Standard tests, their application, and benefits derived from their use, p. 51–54.

1197. **Texas state teachers' association. Proceedings of the forty-second annual meeting, Fort Worth, November 25, 26, 27, 1920.** Texas outlook. 5: 1–47, July 1921. (R. T. Ellis, secretary, Fort Worth, Texas.)

Contains: 1. F. L. McVey: Education as a foundation for national development, p. 9–10. 2. T. H. Harris: How to secure an ample and competent supply of teachers, p. 16–19. 3. B. R. Payne: How to educate an adequate supply of teachers for the school, p. 19–21. 4. J. G. McNary: Address (Education from the viewpoint of a business man), p. 23–27.

1198. **West Virginia education association. Annual proceedings, Parkersburg, West Va., November 4–6, 1920.** 84 p. 8°. (S. E. A. Bulletin, vol. II, no. 1.) (W. W. Trent, secretary, Elkins, West Va.)

Contains: 1. Virginia Foulk: Democracy in education, p. 26–35. 2. E. A. Lee: Problems in part-time education, p. 43–52. 3. H. R. Bonner: Meaning of vocational guidance, p. 62–69.

1199. **Wisconsin teachers' association. Proceedings of the sixty-seventh annual session . . . held at Milwaukee, November 4 to 6, 1920.** Madison, Wis., Democrat printing co., 1920. 378 p. 8°. (M. A. Bussewitz, secretary, Milwaukee, Wis.)

Contains: 1. P. P. Claxton: Salaries, p. 35–43. 2. J. J. Handley: Organized labor on education, p. 48–53. 3. Rachelle S. Yarros: Social hygiene in its relation to public health, p. 54–61. 4. E. A. Fitzpatrick: The Wisconsin educational situation, p. 75–86. 5. R. L. Lyman: Oral composition, p. 130–39. 6. V. A. C. Henmon: Intelligence tests and their uses, p. 139–43. 7. W. F. Faulkes: Relationship of manual arts to vocational education in Wisconsin, p. 156–61. 8. G. M. Phelan: A course in citizenship with records of accomplishments, p. 176–80. 9. W. A. McKeever: Some tense problems in moral education, p. 181–83. 10. M. Rusch: Harmony, natural tendencies, p. 191–200

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11. E. Fessenden: Value of play through games, p. 208–14. 12. A. T. Weaver: The content of a high school course in speech, p. 227–33. 13. Mary V. Rodigan: Dramatics in the high school, p. 235–41. 14. A. P. Minsart: Separate classes for boys and girls in chemistry, p. 251–56. 15. J. H. Finley: Teacher training, p. 267–73. 16. Harriet Leete: The preschool child, p. 290–94.

EDUCATIONAL HISTORY AND BIOGRAPHY.

1200. **González, Luis Felipe.** Historia de la influencia extranjera en el desenvolvimiento educacional y cientifico de Costa Rica. San José de Costa Rica, 1921. xi, 320 p. plates. 8°

Among the nations which have influenced the development of education in Costa Rica, the author assigns a prominent place to the United States as represented by the Bureau of education and by numerous American educators.

1201. **Hurlbut, Jesse Lyman.** The story of Chautauqua. New York and London, G. P. Putnam's sons, 1921. xxv. 429 p. front. (port.) plates. 8°.

A history of the Chautauqua institution, founded nearly 50 years ago by Lewis Miller and John H. Vincent.

1202. The Manuale scholarium, an original account of life in the mediaeval university; tr. from the Latin by Robert Francis Seybolt. Cambridge, Harvard university press, 1921. 122 p. 12°.

Bibliography: p. 119–22.

1203. **Paulsen, Friedrich.** Geschichte des gelehrten unterrichts auf den deutschen schculen and universitäten vom ausgang des mittelalters bis zur gegenwart, mit besonderer rücksicht auf den klassischen unterricht. 3e. erweiterte auflage hrsg. und in einem anhang fortgesetzt von Rudolf Lehmann. Leipzig, Veit & comp., 1919; Berlin und Leipzig, Vereinigung wissenschaftlicher verleger, 1921. 2 v. 8°.

Anhang: Der gelehrte unterricht bis zum weltkrieg. 1892–1914. v. 2, p. 693–797.

CURRENT EDUCATIONAL CONDITIONS.

GENERAL AND UNITED STATES.

1204. **Bellamy, Frances R.** Martha Berry. Good housekeeping, 73: 21–22, 109–14, October 1921. illus.

Description of "The Berry schools," Rome, Ga., and of the founder, "the woman who has built a million dollar plant on faith in God, love of humanity, and money that her enthusiasm won from others."

Summarized in American review of reviews, 64: 537–38, November 1921.

1205. **Collins, Joseph V.** Loss and gain in education. Education, 42: 69–76, October 1921.

Discusses the development of elementary education in the past 50 years, with especial emphasis on the curriculum. Points out defects in methods of teaching. Says that elementary education is "lopsided, superficial, unscientific, and imperfect to a degree."

1206. Educational progress in Wisconsin; prepared under direction of Cecile White Flemming. Issued by C. P. Cary, state superintendent. Biennial report, 1918–1920. Madison, Wis., State department of public instruction, 1921. xi, 252 p. graphs, tables. 8°.

This final report of Supt. Cary has been prepared in cooperation by the members of the staff of the state education department, who contribute monographs on various phases of progress.

1207. **Eliot, C. W.** Protection against ignorance. Chicago schools journal, 4: 1–5, September 1921.

Answers the question "How intelligently shall the efforts of the people be directed toward the satisfaction of their educational desires and needs?"

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1208. **Ettinger, William L.** Present-day problems of the public schools. American review of reviews, 64: 382–84, October 1921.

A summary of public school problems as seen through the eyes of the superintendent of schools of New York City. Defends the schools from adverse criticisms.

1209. **Jones, O. Garfield.** Education and the future of the Filipinos. American review of reviews, 64: 405–14, October 1921.

Describes the remarkable advance of education in the Philippines under American rule. Discusses also the political future of the Islands. Illustrated.

1210. **Landsittel, F. C.** Survey of educational conditions in Fairfield county, Ohio. Pub. by Vernon M. Riegel, superintendent of public instruction as director of education, 1921. Columbus, O., The F. J. Heer printing co., 1921. 53 p. incl. tables. 8°.

1211. **McAndrew, William.** The belated revolution in the public schools. What the fathers of the country thought the schools should be, and how schoolmen at last are coming to agree with them. World's work. 43: 108–12, November 1921.

Holds that the purpose and output of the schools should conform to the national theory, viz., American citizens.

1212. **McDougall, William.** Is America safe for democracy? New York, C. Scribner's sons, 1921. viii, 218 p. plates, figs. 12°.

Six lectures given at the Lowell institute of Boston, under the title "Anthropology and history, or the influence of anthropologic constitution on the destinies of nations."

A study of racial conditions, especially in the United States, including cultural aspects.

1213. **Sears, J. B., *ed.*** The Arlington school survey; a report of a study of the school systems of Arlington and three adjacent rural districts of Sibley county, Minnesota. Minneapolis, The University of Minnesota. 1921. 58 p. graphs, tables, fold. map. 8°. (Bulletin of the University of Minnesota. General extension division. vol. 24, no. 28. August 10, 1921.)

The survey was made by J. B. Sears, director; assisted by F. E. Armstrong, Charles Boardman, E. C. Culbert, W. P. Dyer, Walter Gaumnitz, E. T. Jacobson, and S. B. Severson.

1214. **Yocum, A. Duncan.** The limitation of progressive education. School and home education, 41: 14–21, September 1921.

Reported from a talk before the Harvard teachers' association, April 30, 1921.

FOREIGN COUNTRIES.

1215. **Canada. Dominion bureau of statistics. Education statistics branch.** Historical statistical survey of education in Canada. Pub. by authority of the Right Hon. Sir George E. Foster, minister of trade and commerce. Ottawa, Thomas Mulvey, printer to the King's most excellent majesty, 1921. 120 p. graphs, tables, fold. chart. 8°.

A statistical view of education in Canada during the period 1901–1920.

1216. **Danton, George H.** Aspects of education in China. School and society, 14: 263–72, 296–304, October 8, 15, 1921.

Gives particular attention to characterizing the services of foreign educators and teachers in the Chinese educational system.

1217. **Kirkaldy, Adam W.** University college, Nottingham. Education, 42: 116–24, October 1921.

Descriptive of a college located at Nottingham, England, definitely organized to develop the higher interests—literary, artistic, and scientific.

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1218. **Pahlow, Edwin W.** Oxford and Cambridge as seen by American soldier-students. Scribner's magazine, 70: 477–83, October 1921.

Writer was formerly dean of American soldier-students in British universities.

1219. **Pasvolsky, Leo.** Education under communism: the structure of soviet education. Educational review, 62. 210–23, October 1921.

A review of educational methods and administration in Russia.

1220. **Rogers, Mary E.** Education in Serbia. Southern workman, 50: 449–57, October 1921.

Describes among other things the school at Cacak, Central Serbia, which was started by the child welfare commission of the Serbian relief committee of America. Illustrated.

1221. **Rothmaler, A. de.** Les hautes-écoles de paysans au Danemark. Revue pédagogique, 79: 189–208, September 1921.

1222. **Špišek, Ferd.** L'enseignement tchécoslovaque: son passé et son avenir.—II. L'enseignement secondaire. Revue internationale de l'enseignement, 41: 316–22, September–October 1921.

To be continued.

EDUCATIONAL THEORY AND PRACTICE.

1223. **Dugas, L.** Les idées de Guyau sur l'éducation. Revue pédagogique, 79: 175–88, September 1921.

1224. **Graff, Ellis U.** Essentials in education. Indianapolis, The Bobbs-Merrill company [1921] 5 p. l., 245 p. 12°.

The superintendent of schools in Indianapolis, Ind., offers a practical discussion of some fundamental principles and methods in public education in this book, which is based on the writer's own experience, with distinct recognition of current educational conditions.

1225. **Lotz, Ernst.** Lehrplanpolitik. Pädagogische erwägungen eines humanisten. Monatschrift für höhere schulen (Berlin) 20: 193–203, July–August 1921.

1226. **Townsend, H. G.** Education as criticism. Philosophical review, 30: 367–79, July 1921.

1227. **Watson, Foster, *ed.*** The encyclopaedia and dictionary of education; a comprehensive, practical, and authoritative guide on all matters connected with education, including educational principles and practices, various types of teaching institutions, and educational systems throughout the world. In four volumes. Vol. 1–2. London, New York [etc.] Sir Isaac Pitman & sons, ltd., 1921. 2 v. plates, illus. 4°.

The completion of the second volume of this new Encyclopedia of education carries the work to the beginning of the letter M. More than 850 contributors, specialists in various lines of education, join in the preparation of the Encyclopaedia, which will be useful for consultation on subjects relating to British education, to which it is mainly devoted. Considerable attention, however, is given to the educational institutions and methods of other countries than Great Britain. Among the American contributors to the work are Profs. E. P. Cubberley, John Dewey, C. H. Judd, and Paul Monroe.

1228. **Yeomans, Edward.** The educated person. Atlantic monthly, 128: 486–91, October 1921.

Says that educational processes should give heed to relationships, with the inorganic as well as the organic world, and should produce people who are on the way to appraise life fairly, who will know the difference between first class and second class—that is, have a proper scale of values.

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EDUCATIONAL PSYCHOLOGY; CHILD STUDY.

1229. **Kitson, Harry D.** How to use your mind; a psychology of study. Being a manual for the use of students and teachers in the administration of supervised study. 2d ed., rev. and enl. Philadelphia and London, J. B. Lippincott company [1921] 253 p. 12°.

Tells how to approach intellectual work and how to carry it through.

1230. **Limentani, Ludovico.** L'educazione pratica della volontà. Rivista pedagogica (Rome) 14: 232–49, May–June 1921.

To be continued.

1231. **Peaks, Archibald G.** Periodic variations in efficiency, as shown in mental and physical tests together with some weather effects. Baltimore, Warwick & York, inc., 1921. 95 p. tables. 12°. (Educational psychology monographs, no. 23.)

An investigation of periodic variations in both physical and mental activities during the year, during the day, and in conjunction with periodic changes in natural phenomena such as sunlight and temperature. Gives a history of experiments in this field, and presents results both from other investigators and from the writer's own original researches.

1232. **Pyle, William Henry.** The psychology of learning; an advance text in educational psychology. Baltimore, Warwick & York, inc., 1921. 308 p. graphs, tables. 12°.

Bibliography: p 294–303.

This book undertakes to state everything that is known about learning. All the experimental work that throws any light on the nature of learning has been carefully examined, and in the light of the experimental results, the author endeavors to give the present impartial verdict of educational psychology. The experimental method for teaching the subject is recommended.

EDUCATIONAL TESTS AND MEASUREMENTS.

(Including Psychological Tests.)

1233. **National association of directors of educational research.** Papers presented at meeting at Atlantic City, N. J., March 3, 1921. Journal of educational research, 4: 1–55, June 1921.

Contains: 1. W. S. Gray: Diagnostic and remedial steps in reading, p. 1–15. 2. G. M. Whipple: The national intelligence tests, p. 16–31. 3. E. J. Ashbaugh: The measurement of language—what is measured and its significance, p. 32–39. 4. I. J. Bright: The intelligence examination for high-school freshmen, p. 44–55.

1234. **Courtis, Stuart A.** Educational measurements in Detroit. Kindergarten and first grade, 6: 309–14, October 1921.

We need to keep accurate records of all the temperaments, tastes, and peculiarities of children. Intelligence tests are a first step in sorting children.

1235. **Fordyce, Charles.** Intelligence tests in classifying children in the elementary school. Journal of educational research, 4: 40–43, June 1921.

A study of the results of the Haggerty intelligence examination in comparison with the school grades and estimates of teachers in the case of a group of pupils in the elementary grades at Lincoln, Neb.

1236. **Gates, Arthur I.** An experimental and statistical study of reading and reading tests. Journal of educational psychology, 12: 303–14, 378–91, 445–64, September, October, November 1921.

1237. **Hayes, Seth.** Cooperative chemistry tests. Journal of educational research, 4: 109–20, September 1921.

Work of the chemistry teachers of Cleveland, Ohio. The tests are intended to be "rapid-fire, and to call forth quick and accurate thinking by the pupils." Directions are given for conducting the tests.

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1238. **Merrill, Maud A.** The relation of intelligence to ability in the "three R's" in the case of retarded children. Pedagogical seminary, 28: 249–74, September 1921.

A record of group tests made in the Oakland, Calif., public schools.

1239. **Otis, Arthur S.** *and* **Knollin, Herbert E.** The reliability of the Binet scale and of pedagogical scales. Journal of educational research, 4: 121–42, September 1921.

1240. **Proctor, William Martin.** The use of psychological tests in the educational and vocational guidance of high school pupils. Bloomington, Ill., Public school publishing company, 1921. 70 p. graphs, tables. 8°. (Journal of educational research monographs. no. 1, June 1921)

1241. **St. Denis, R. de.** Colleges and psychological tests. America, 26: 5–6, October 22, 1921.

Writer says that any reliable test must include the following elements: character analysis, memory capacity, intellectual attainments and physical aptitude, mental and physical reactions; in short all the things that make up a man's mental and physical abilities and habits. Judged by this standard, practically all tests in present use are more or less defective.

1242. **Terman, Lewis M.** Mental growth and the I. Q. Journal of educational psychology, 12: 325–41, 401–7, September, October 1921.

1243. **Thorndike, Edward L.** On the new plan of admitting students at Columbia university. Journal of educational research, 4: 95–101, September 1921.

Discusses the merits of the psychological examination of students. The writer says that such examination alone would not be a fully satisfactory means of selecting students, but is supplemented by the students' complete previous records. With a few exceptions the higher a student's score in the psychological examination, the better was his record in college.

1244. **Virginia. Education commission.** Virginia public schools; a survey of a Southern state public school system. Part two—Educational tests. Yonkers-on-Hudson, N. Y., World book company, 1921. xii, 235 p. graphs, tables. 12°. (Educational survey series)

Starting with the principle that reading, writing, and arithmetic remain through all the changing conceptions of education the fundamental aims of instruction in the elementary school, the Division of tests of the Virginia school survey staff, under the direction of Dr. M. E. Haggerty, has measured the work of the public schools of the state in these branches, and also in spelling. Tests of high-school composition and elementary algebra were also made in 25 representative high schools in various parts of Virginia. The results of these measurements by standard tests, as given in detail with tables and graphs in this volume, afford norms for some well-known tests in terms of typically Southern conditions.

SPECIAL METHODS OF INSTRUCTION.

PROJECT METHOD.

1245. Dangers and difficulties of the project method and how to overcome them—a symposium. By Profs. Kilpatrick, Bagley, Bonser, Hosic, and Mr. Hatch, of Teachers college. Teachers college record, 22: 283–321, September 1921.

CONTENTS.—I. Introductory statement: definition of terms, W. H. Kilpatrick.—II. Projects and purposes in teaching and in learning, W. C. Bagley.—III. Dangers and difficulties of the project method, F. G. Bonser.—IV. The project method, J. F. Hosic.—V. Student reactions to the project method, R. W. Hatch.—VI. A review and summary, W. H. Kilpatrick.

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1246. **Warren, Minetta L.** The project method. Journal of education, 94: 176–177, September 1, 1921.

The beginning of a series of articles on the project method which are to continue in following issues of this journal.

OTHER METHODS.

1247. **Wolstencroft, H. P.** The Dalton plan; a record of a year's experience in an English school. Educational times (London) n. s. 3: 461–62, October 1921.

Says that the plan has the advantage of being applicable to any curriculum, and that it has resulted in better work, greater progress, increased interest, fuller scope, and the growth of self-reliance and a feeling of responsibility among the pupils.

SPECIAL SUBJECTS OF CURRICULUM.

READING.

1248. **Parker, Samuel C.** How to teach beginning reading. Elementary school journal, 22: 15–30, 104–17, September, October 1921.

The first of this series of articles includes a presentation of the scientific principles and evidence which justify the methods and devices for teaching beginning reading. The second article discusses pre-primer blackboard and chart reading; beginning book reading, etc. To be continued.

1249. **Wilson, Estaline.** Specific teaching of silent reading. Elementary school journal, 22: 140–46, October 1921.

Describes a series of tests in the schools of Cincinnati, Ohio, in which a number of different kinds of material were presented, including arithmetic, geography, civics, grammar, narrative material, and poetry.

SPELLING.

1250. **Pittman, Marvin Summers** *and* **Pryor, Hugh Clark.** A guide to the teaching of spelling. New York, The Macmillan company, 1921. xi, 141 p. 12°.

This manual summarizes and interprets in plain language current literature on the teaching of spelling and the results of recent experiments in the subject. It discusses the fundamental psychological principles involved in the teaching of spelling, reviews the best methods, and considers various types of spelling textbooks now in use, and various special lists of words.

ENGLISH AND COMPOSITION.

1251. **Clapp, John Mantle.** The "better speech movement" and the world of business. English journal, 10: 450–55, October 1921.

1252. **Deming, Alhambra G.** Methods and material for composition in intermediate and grammar grades. Chicago, Beckley-Cardy company, 1921. 232 p. 12°.

A handbook for teachers designed to cover with its suggestions the entire composition work of the intermediate and grammar grades, and to afford original methods and a variety of material to supplement a regular textbook.

1253. **Savage, Howard J.** Personnel for college composition. English journal, 10: 439–49, October 1921.

Remarks on the personnel of college teachers of English composition.

1254. **Thorndike, Edward L.** Word knowledge in the elementary school. Teachers college record, 22: 334–70, September 1921.

Gives counts of the frequency of occurrence of words in the material which the pupil or graduate will or should read. Describes the "Teacher's word book."

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LITERATURE.

1255. **Kellogg, Annie F.** Golden numbers: an experiment in teaching love of poetry to high-school pupils. English journal, 10: 367–75, September 1921.

ANCIENT CLASSICS.

1256. **Carr, W. L.** *and* **Gray, Mason D.** The classical survey. Classical journal, 17: 16–27, October 1921.

The object of the survey was to prepare a constructive program of recommendations for improvement in the teaching of Latin and Greek in the secondary schools of the United States. A revised form of a report that was originally submitted to the advisory committee and the chairman of the regional committees of the American classical league, at a meeting held in Philadelphia, July 6, 1921.

1257. The classics in education. Journal of education and School world (London) 53: 575–77, September 1921.

Report of the committee appointed by the prime minister to inquire into the position of classics in the educational system of the United Kingdom.

1258. **Coolidge, Calvin.** Value of the classics. Classical journal, 17: 28–35, October 1921.

Also in American education, 25: 12–16, September 1921.
A defense of the classics, delivered before the American classical league in Philadelphia, July 7, 1921.

1259. **Welldon, J. E. C.** The future of the classics. Contemporary review, 120: 313–21, September 1921.

Based on the report of the committee which was appointed by the British prime minister in November, 1919, "to inquire into the position to be assigned to the classics (*i. e.*, to the language, literature, and history of ancient Greece and Rome) in the educational system of the United Kingdom, and to advise as to the means by which the proper study of these subjects may be maintained and improved."

MODERN LANGUAGES.

1260. **Davies, Gwendoline.** Modern languages in the United States. Modern languages (London) 3: 11–15, October 1921.

The impressions of a British teacher visiting in America, regarding modern language teaching in the United States.

1261. **Franzén, Carl G. F.** Foreign language teaching in the high schools of Iowa. School review, 29: 610–16, October 1921.

In Iowa during the school year 1920–21, there were four foreign languages taught—Latin, French, Spanish, and Norse. Latin is very popular, with French second.

1262. **Gourio, E.** The direct method of teaching French. Boston, New York [etc.] Houghton Mifflin company [1921] 163 [1] p. 12°.

SCIENCE AND MATHEMATICS.

1263. **Glenn, Earl R.** The improvement of chemistry and physics instruction in American high schools. School science and mathematics, 21: 671–73, October 1921.

Given at the University of Pennsylvania, April 7, 1921, during Schoolmen's week.

1264. **Williams, Lewis W.** The mathematics needed in freshman chemistry. School science and mathematics, 21: 654–65, October 1921.

GEOGRAPHY.

1265. **Adams, William C.** Practical methods for teaching elementary geography. New York, Philadelphia [etc.] Hinds, Hayden & Eldredge, inc. [1921] 135 p. 16°.

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1266. **Atwood, Wallace W.** *and* **Thomas, Helen Goss.** Teaching the new geography; a manual for use with the Frye-Atwood geographical series. Boston, New York [etc.] Ginn and company [1921] 203 p. 10°.

1267. **Brigham, Albert Perry** *and* **McFarlane, Charles T.** Essentials of geography; a manual for teachers. New York, Cincinnati, [etc.] American book company [1921] 198 p. front. illus. 16°.

1268. **Cooper, C. E.** Status of geography in the normal schools of the eastern states. Journal of geography, 20: 217–224, September 1921.

Survey of the status of geography in normal schools.

1269. **Smith, E. Ehrlich.** Teaching geography by problems. Garden City, N. Y., and Toronto, Doubleday, Page & company, 1921. xix, 306 p. front., plates. 12°.

Presents the modern principles involved in teaching geography by problems and projects, and concrete examples of teaching the subject according to these principles. The volume also gives lists of reference books and other helpful material which in teaching geography by the project method are required to supplement the school text.

HISTORY.

1270. **Gabriel, Ralph H.** The general course in United States history and the liberal arts college. Historical outlook, 12: 237–39, October 1921.

1271. **Selby, E. M.** A teacher's observation of practice-teaching in history. Ohio history teachers' journal, Bulletin no. 22, May 1921, p. 251–55.

The conclusions are based on experiences of the writer as a student in the College of education of the Ohio State university.

DRAMATICS.

1272. **Colby, Gertrude K.** The conflict, a health masque in pantomime. With an introduction by Thomas D. Wood. New York, A. S. Barnes and company, 1921. 70 p. front., plates., diagrs. 8°.

1273. **Taft, Linwood.** The technique of pageantry. New York, A. S. Barnes and company, 1921. viii, 168 p. front. 8°.

Regarding pageantry as the most appropriate medium of expression of a specific phase of community life, the author, who has had large experience in directing pageants, offers this volume as an aid to communities which may wish to celebrate anniversaries seeming to them memorable. Part I gives a general discussion of the technique of pageantry, and Part II contains specimen programmes of several particular pageants.

SAFETY.

1274. **Oregon. Department of education.** Course of study for safety education in Oregon schools. Issued by J. A. Churchill, superintendent of public instruction for Oregon. Salem, Or., State printing department, 1920. 62 p. illus. 8°.

KINDERGARTEN AND PRIMARY SCHOOL.

1275. **Mitchell, Lucy Sprague.** Here and now story book, two- to seven-year-olds. Experimental stories written for the children of the City and country school (formerly the Play school) and the Nursery school of the Bureau of educational experiments. New York, E. P. Dutton & company [1921] xii, 360 p. illus. 12°.

Mrs. Mitchell explains the plan of this book in the Introduction, p. 1–72. The stories given in the following pages are fashioned on the model of stories actually told by children themselves about their own doings and every-day experiences. The writer regards the modern stories which adults write for young children as unsuitable for the purpose intended.

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RURAL LIFE AND CULTURE.

1276. **American country life association.** Rural organization. Proceedings of the third National country life conference, Springfield, Mass., 1920. [Chicago, Ill.] Pub. by the University of Chicago press for the American country life association [1921] 242 p. front. 8°. (C. J. Galpin, executive secretary, Washington, D. C.)

Contains: 1. K. L. Butterfield: President's address—The past and the future of the country life movement, p. 1–8. 2. Lorado Taft: An American rural art movement, p. 9–22. 3. E. R. Groves: Rural organization and rural psychology, p. 56–65. 4. Dwight Sanderson: Some fundamentals of rural community organization, p. 66–77. 5. Mabel Carney: Rural community organization, p. 82–85. Discussion, p. 85–88. 6. H. P. Douglas: Recent legislation facilitating rural community organization, p. 117–26. Discussion, p. 127–32. 7. Mabel Carney: Local, state, and federal organization for effective rural education, p. 133–41. 8. J. D. Wolcott: Organization for rural library extension and for education through the library, p. 142–46. 9. C. J. Galpin: The physical aspects of the American farm home, p. 155–60. 10. W. H. Wilson: Report of the committee on morals and religion, p. 169–76. 11. W. J. Campbell: Report of committee on training for rural leadership, p. 187–92. Discussion, p. 192–94. 12. E. C. Lindeman: Organization for rural recreation, p. 201–7.

1277. **Burr, Walter.** Rural organization. New York, The Macmillan company, 1921. x, 250 p. 12°.

A practical discussion of rural organization, containing suggestions along the lines of farm production, marketing, securing supplies, finance and accounting, communication and transportation. The book also takes up the social functions, education, sanitation, recreation, and home making.

RURAL EDUCATION.

1278. **Collings, P. McB.** The reconstruction of elementary rural school aims. Missouri school journal, 38: 326–33. September 1921.

A scientific method for determining particularized elementary rural school outcomes.

1279. **Louisiana. Department of education.** Course of study for rural and elementary schools. Prepared by the division of rural and elementary schools. Pub. by the state department of education, T. H. Harris, state superintendent. Baton Rouge, La., Ramires-Jones printing co., 1921. 239 p. 8°.

1280. **Pittman, Marvin Summers.** The value of school supervision demonstrated with the zone plan in rural schools. Baltimore, Warwick & York, inc., 1921. x, 129 p. 12°.

Gives the results of a test of the value of supervision made in the rural schools of Brown county, South Dakota, and describes the zone plan of supervision, which was employed.

1281. **Rapeer, L. W.** Play in the new rural education. American education, 25: 17–22, September 1921.

A plea for improved play provisions in rural schools.

1282. **Smith, R. R.** The future country school. Education, 42: 111–15, October 1921.

The impressions of a layman, a college graduate and farmer, who has children attending a country school.

1283. **Vermont. Board of education.** The state course of study of Vermont. Pt. 1 for rural and elementary schools. Prepared under direction of Clarence H. Dempsey, commissioner of education. Authorized by the state board of education. Montpelier, Vermont, 1921. 324 p. 8°.

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SECONDARY EDUCATION.

1284. **High school teachers association of New York city.** The high schools of New York city; a handbook of procedure and personnel. Clyde R. Jeffords and Claude F. Walker, editors. New York, 1921. 223 p. 8°.

This book is a general manual of the public high schools of the greatest city of the country, giving a rather full account of their origin and development, their curriculum, the present trend of high school teaching, and the professional status and compensation of high school teachers. It includes also a directory of the schools and their teachers.

1285. **Hollister, H. A.** Report of the high school visitor, University of Illinois, for the year 1920–21. Urbana, The University of Illinois, 1921. 68 p. charts, tables. 8°. (University of Illinois bulletin, vol. 18, no. 33. April 18, 1921.)

Contains: 1. The financial side of the teaching profession—a study of the salaries of high school teachers in 370 accredited public high schools in Illinois, p. 6–21. 2. The influence of the sex balance of the teaching staff on the ratio of boys to the total number of pupils enrolled in public high schools in Illinois, p. 22–27. 3. List of accredited schools and tabular report, p. 30–60.

1286. **Ivy, H. M.** High schools. Issued by W. F. Bond, state superintendent of education. [n. p. 1921] 128 p. 8°. (Mississippi. Department of education. Bulletin no. 23, 1921)

1287. **Lyman, R. L.** The junior high schools of Montclair, New Jersey. School review, 29: 495–509, September 1921.

Discusses the activities of various classrooms; instructional ideals; the curriculum; student control and discipline, etc.

1288. **Ohio. Department of education.** Ohio high school standards (junior and senior) A manual of suggestions for the high school teachers of the state with requirements for the organization and administration of the recognized high schools. Prepared by Walton B. Bliss . . . under the direction of Vernon M. Riegel. Columbus, Ohio, The F. J. Heer printing co., 1921. 120 p. 8°.

TEACHER TRAINING.

1289. **Fischer, Aloys.** Über das studium der pädagogik an den hochschulen. Zeitschrift für pädagogische psychologie und experimentelle pädagogik (Leipzig) 22: 273–89, September–October 1921.

1290. **Hertzog, Walter Scott.** State maintenance for teachers in training. Baltimore, Warwick & York, inc., 1921. 144 p. tables, diagrs. 12°.

With reference to the problem of an adequate supply of trained teachers for the public schools, this study examines the subject of State encouragement of prospective teachers. It surveys the conditions which may justify additional aid for prospective teachers, and describes plans for recruiting the profession through financial assistance which are now in operation in the United States and in various foreign countries. Methods of recruiting other professions and occupations through financial assistance are also presented for comparison with teaching, and the advantages and disadvantages of subsidies for teacher training are discussed.

TEACHERS' SALARIES AND PROFESSIONAL STATUS.

1291. **Blackwell, C. P.** *and* **Crandall, W. G.** Professional improvement of college teachers. Educational administration and supervision, 7: 388–400, October 1921.

The resulting information from letters sent out to colleges and universities and to educators asking for statements concerning the methods of professional improvement now in use in the institutions and for the personal opinions of the educators.

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1292. **Byrne, Lee.** A method of equalizing the rating of teachers. Journal of educational research, 4: 102–8, September 1921.

Gives an illustration of the method of reducing crude ratings to uniformity of level and dispersion, etc.

1293. **Courtis, Stuart A.** Standards of teaching ability. Educational review, 62: 183–86, October 1921.

Writer says that a whole new field of research must be explored before final standards of teaching ability are possible. Emphasizes the necessity of formulating a definition of teaching ability wholly in terms of the changes to be produced in children.

1294. An educational program. Survey, 47: 57, October 8, 1921.

Program of work for the current school year of the Teachers' union of New York city.

1295. **Kirkpatrick, J. E.** The professor on behalf of his profession. New republic, 28: 68–70, September 14, 1921.

1296. **Massachusetts. Department of education. Division of elementary and secondary education and normal schools. . . .** Salaries of teachers in the public day schools of Massachusetts, 1921. Boston, 1921. 24 p. incl. tables. 8°. (Massachusetts. Bulletin of the department of education, 1921, no. 4. Whole no. 124.)

1297. **Sears, J. B.** The measurement of teaching efficiency. Journal of educational research, 4: 81–94, September 1921.

Presents a history of teacher-rating schemes. Outlines the requirements for an effective teacher measurement. Gives a bibliography: p. 92–94.

HIGHER EDUCATION.

1298. **Andrews, M. B.** How to work your way through college. Greensboro, North Carolina, 1921. 63 [1] p. 8°.

1299. **Butler, Nicholas Murray.** Scholarship and service; the policies and ideals of a national university in a modern democracy. New York, C. Scribner's sons, 1921. xii, 399 p. 12°.

This volume is made up of selections from the addresses and reports of the president of Columbia university. The papers included endeavor to interpret the modern university in terms of its ideals, of its problems, and of its counsels. Principles are established which are of general application to all modern universities functioning in democracies.

1300. **Coffman, L. D.** What part shall the colleges and universities play in the American program of education? School and home education, 41: 1–5, September 1921.

Address given before the National education association, Des Moines, Iowa, July 6, 1921.

1301. **Dawson, W. H.,** *ed.* The yearbook of the universities of the empire, 1921. London, G. Bell and sons, ltd., 1921. xiv, 571 p. 12°.

1302. **Donnelly, Francis P.** Unity of education. America, 25: 560–62, October 1, 1921.

Discusses the attainment of unity in college education, with particular reference to electivism and the departmental system.

1303. **Kehr, Marguerite Witmer.** A comparative study of the curricula for men and women in the colleges and universities of the United States. [n. p., 1920] 25 [1] p. 12°.

Thesis (Ph. D.)—Cornell University.
Reprinted from the Journal of the Association of collegiate alumnae, vol. XIV, no. 3, December 1920.

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1304. **Koos, Leonard V.** Current conceptions of the special purposes of the junior college. School review, 29: 520–29, September 1921.

A survey of the current ideas of the special functions of the junior college.

1305. ———. Junior-college courses in 1920–21. School review, 29: 586–92, 668–78, October, November 1921.

The sources of the data used in this study were the bulletins or catalogs of junior colleges. Part I sets forth the general curricular situation and the prescribed work. Part II gives the offerings by subject-groups and courses.

1306. **Lloyd, Alfred H.** Fellowships and their relation to teaching. Educational review, 62: 197–209, October 1921.

Defines a fellowship at an American university under these aspects: Physical, intellectual, and moral. "At any of our graduate schools," says the writer, "a fellowship should mean complete freedom, as well as distinct ability, of mind."

1307. **McConn, Max.** Bachelor of arts: what is it? New republic, 28: 154–56, October 5, 1921.

Criticizes grades, credits, and degrees. Speaks of them as "elusive entities," and advocates the elimination of the whole mechanism.

1308. **Scott, Samuel M.** A possible remedy. Harvard graduates' magazine, 30: 24–32, September 1921.

A discussion of the elective system of Harvard university.

1309. **Wood, B. D.** The measurement of college work. Educational administration and supervision, 7: 301–334, September 1921.

A report on the preparation and study of a new type of examination.

SCHOOL ADMINISTRATION.

1310. **Ettinger, William L.** Economy in school administration. [New York. The printing class, The boys of the Vocational school, 1921] 29 p. 16°

Annual address of the superintendent of schools, city of New York, before the associate superintendents, district superintendents, directors and inspectors of special branches, September 18, 1921.

Also in Bulletin of high points in the work of the high schools of New York September 1921, p. 3–8.

1311. **Hart, Joseph K.** Decentralization in education. Survey, 47: 53–55, October 8, 1921.

Declares that the foundations of a decentralized educational system will be the various local communities of the state. Discusses the developments in Wisconsin.

1312. **Learned, Henry Barrett.** The educational function of the national government. American political science review, 15: 335–49, August 1921.

1313. **MacDonald, D. J.** Democracy in school administration—Some fundamental principles. American school board journal, 63: 31–33, 119, September 1921.

A good definition of democracy and an enumeration of those principles which must be operative before democracy can prevail in school administration circles.

1314. **National committee for chamber of commerce cooperation with the public schools.** Know and help your schools. Third report. An interpretation of inquiry no. III relating to boards of education and the receipts and expenditures of urban public schools. Directed by The National committee for chamber of commerce cooperation with the public schools and the American city bureau. New York, Chicago, [etc.] American city bureau. 1921. 47 p. 8°.

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1315. Should boards of education be independent of the city government? American city, 25: 307–8, October 1921.

Says that "the best interests of the public schools can not be served in a city where the budget of the board of education may be reduced and remodeled by city officials who have not made a definite study of the needs of the schools."

From "Know and help your school," the report of a survey directed by the National committee for chamber of commerce cooperation with the public schools, and the American city bureau.

1316. **Swift, Fletcher H.** The declining importance of state funds in public-school finance. School review, 29: 534–46, September 1921.

Writer says that after 50 years of support by local taxation, the country finds itself in an educational situation marked by economic and educational inequalities. Suggests a possible modification, perhaps a complete reversal of our traditional plan of school support. Gives tables of statistics.

SCHOOL MANAGEMENT.

1317. **Campbell, Arthur L.** Keeping the score. School review, 29: 510–20, September 1921.

Recommends the introduction of an open system, with the modern duplicating feature, such as is used in salesbooks, bank deposit books, and other similar business devices. Gives specimen of a school score card, which has been used with success by the writer.

1318. **Maxwell, C. R.** The selection of textbooks. Boston, New York [etc.] Houghton Mifflin company [1921] x, 139 p. 12°. (Riverside educational monographs, ed. by H. Suzzallo)

CONTENTS.—I. The textbook a necessary tool in teaching.—II. The common basis for selection of texts.—III. Current methods of selecting textbooks.—IV. Method and term of adoption as a factor.—V. Free textbooks versus individual ownership.—VI. Justifiable standards for selection.—VII. Outline aids for judging all texts.—VIII. Special outlines for evaluating texts in different subjects.

1319. **Stockton, James L.,** *and others.* Criteria for the regrading of schools. Elementary school journal, 22: 55–66, September 1921.

Results of problem-project methods, etc. The authors have carried out an extended program of standard testing in the training school of the San Jose state normal school, California, and present the results of their studies.

SCHOOL BUILDINGS AND GROUNDS.

1320. **Hallett, E. S.** The relative merits of heating systems. American school board journal, 63: 43–45, September 1921.

SCHOOL HYGIENE AND SANITATION.

1321. **American child hygiene association.** Transactions of the 11th annual meeting, St. Louis, Mo., October 11–13, 1920. Baltimore, Press of Franklin printing company, 1921. 440 p. 8°. (Headquarters of the association: 1211 Cathedral street, Baltimore, Md.)

Contains: 1. Herbert Hoover: A program for American children, p. 23–28. 2. Papers and discussion on Pre-school age and School age and adolescence, p. 97–173.

1322. **Brown, Maud A.** Health program in the Kansas City schools, 1919–21. Elementary school journal, 22: 132–39, October 1921.

Describes a health service for grade children, which is simple enough "to be carried on by the teacher without the help of physician or nurse," etc., now in operation in the Kansas City, Mo., public schools.

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1323. **Clark, Taliaferro.** School health supervision in Minneapolis, Minn. Public health reports (U. S. Public health service) 36: 1902–36, August 12, 1921.

1324. **Dickson, Frank D.** Effect of posture on the health of the child. Journal of the American medical association, 77: 760–64, September 3, 1921.

Describe the results of bad posture; the treatment by diet and general care; and the correction of deformity, etc. Illustrated.

1325. **Fones, Alfred C.** Seven years of mouth hygiene in the Bridgeport schools. Dental cosmos, 63: 1000–4, October 1921.

Work in the Bridgeport, Conn., public schools described.

1326. **Harris, Louis I.** Minimum health and sanitation standards in schools. An address delivered before the Teachers union of the city of New York. New York, The Teachers union of the city of New York, 1921. 16 p. 8°. (A survey of the schools by teachers, 1921, no. 1.)

Also in the Nation's health, 3: 477–79, 582–86, August, October 1921.

1327. **Hoefer, Carolyn.** Increasing the efficiency of health instruction in the public schools. Elementary school journal, 22: 31–43, September 1921.

Says that the most objective method of measuring the result of health teaching is the regular weighing and measuring of the children. Studies the material and methods for effective health principles. Gives bibliography.

1328. **Howe, William A.** School health service in New York state. American journal of public health, 11: 873–87, October 1921.

Presents some interesting statistics of conditions in New York state.

1329. **Iowa. University. Extension division.** . . . The school lunch. Iowa City, The University [1921] [27] p. illus. 8°. (Extension division bulletin no. 70. O. E. Klingaman, M. A., editor.)

1330. **Spencer, R. R.** Mental health maintenance emphasized. Nation's health, 3: 540–42, October 1921.

Discusses the training of the emotions; emotion as motive power, etc. Says that mental hygiene considers fully the behavioristic significance of mental attitudes.

1331. **Veeder, Borden S.** The rôle of fatigue in the malnutrition of children. Journal of the American medical association, 77: 758–60, September 3, 1921.

1332. **Zingher, Abraham.** Diphtheria prevention work in the public schools of New York city. Journal of the American medical association, 77: 835–41, September 10, 1921.

Describes the results of Schick test and toxin-antitoxin immunization. The Schick test and the control test were applied to more than 52,000 school children in 44 public schools in the boroughs of Manhattan and the Bronx.

SEX HYGIENE.

1333. **Edson, Newell W.** Some facts regarding sex instruction in the high schools of the United States. School review, 29: 593–602, October 1921.

Says that among the various States there is no uniformity in the ratio of schools giving sex education to those not giving it. The West has progressed further in developing sex education than have other sections of the country.

1334. **Galloway, T. W.** The father and his boy; the place of sex in manhood making. New York, Association press, 1921. xi, 99p. 16°.

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PHYSICAL TRAINING.

1335. **Lowman, C. L.** Present day problems in physical education. Mind and body, 28: 705–12, September–October, 1921.

The author claims that seventy-five to eighty-five per cent of all our school children have some physical defect.

1336. **New York (State) University.** General plan and syllabus for physical training in the elementary and secondary schools of the state of New York, as adopted by the board of regents of the University of the state of New York upon the report and recommendation of the military training commission of the state of New York. . . Albany, The University of the state of New York, 1921. 3v. plates. 8°. (Bulletin nos. 721–723)

Contents: Bk. 1.—Rural and ungraded schools. Bk. 2.—Elementary schools. Bk. 3.—Secondary schools.

1337. **Taylor, Everett B.** Physical development of midshipmen. Nation's health, 3: 527–32, September 1921.

Physical education at the U. S. Naval academy. Illustrated.

PLAY AND RECREATION.

1338. **Patrick, G. T. W.** The play of a nation. Scientific monthly, 13: 350–62, October 1921.

The physiological and psychological aspects of play described. Social effects of certain amusements. Says that the true approach to healthful and harmonizing recreations for the nations is through the public schools.

SOCIAL ASPECTS OF EDUCATION.

1339. **Dyer, Helen J.** The socialized recitation from the point of view of a grade teacher. Elementary school journal, 22: 49–54, September 1921.

The writer describes her work in the schools of Springdale, Pa. Says that the plan develops honor and dependability on the part of the pupils.

1340. **Hendricks, Genevieve Poyneer,** *comp.* Handbook of social resources of the United States. Washington, D. C., The American Red Cross, 1921. lxxi, 300 p. 8°.

1341. **Moore, Harry H.** Our complex civilization and the genius of its youth. School review, 29: 617–27, October 1921.

Says that the impasse confronting society to-day is to a great extent due to a lack of intelligence. Advocates courses in sociology and economics in high schools as a solvent to radicalism, etc.

1342. **National association of visiting teachers.** The visiting teacher in the United States; a survey by the National association of visiting teachers and Home and school visitors. New York city, The Public education association of the city of New York, 1921. 64 p. 12°.

CONTENTS.—Introduction.—Forward.—How visiting teacher work originated and developed.—The place of the visiting teacher in the school system.—How the visiting teacher goes about her work.—Why children are referred to the visiting teacher.—How the visiting teacher analyses and solves her problems.—What qualifications are essential for visiting teacher work.—What are the fundamental characteristics and the prospects of the work.

1343. **Pound, Arthur.** The iron man. Atlantic monthly, 128: 433–41, October 1921.

Writer is a resident of Flint, Mich., a manufacturing center for automobiles. This article gives the results of his study of the reactions of automatic machinery upon social relationships as regards factory workers. He shows that in a town dominated by automatic machinery, the educational problem is to train youth for the right use of leisure.

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1344. **Williams, Joseph T.** Education in recent sociology. Education, 42: 77–89, October 1921.

Part 5 of a series of articles. Discusses education as set forth in the "Principles of sociology," by Prof. Edward A. Ross.

CHILD WELFARE.

1345. **Ball, Florence V.** Children and industry; a study of the child at work in Cleveland, Ohio. [Cleveland, 1921] 54 p. incl. tables. 8°.

Reprinted by permission from the report issued by the Hospital and health survey, Cleveland, Ohio, 1921.

1346. **Ensign, Forest Chester.** Compulsory school attendance and child labor; a study of the historical development of regulations compelling attendance and limiting the labor of children in a selected group of states. Iowa City, Iowa, The Athens press [1921] ix, 263 p. 8°.

After a preliminary examination of English, colonial, and early national antecedents for compulsory education and child labor legislation in America, this study takes up the history of the subject in Massachusetts, Connecticut, New York, Pennsylvania, and Wisconsin, followed by a summary and conclusion. The writer says that the child labor and education standards in these five States must not be regarded as typical for the United States as a whole, but rather as models toward which the remainder of the country is approaching.

MORAL EDUCATION.

1347. **Cohen, Morris R.** Dante as a moral teacher. New republic, 28: 181–84, October 12, 1921.

1348. **Gould, Frederick J.** Moral education conference at Geneva. Journal of education and school world (London) 53: 637, 640, October 1, 1921.

Proceedings of a conference preliminary to an International moral education congress, to be held in Geneva in July or August 1922.

1349. **Otto, M. C.** The moral education of youth. International journal of ethics, 32: 52–67, October 1921.

Says that the important qualities of the moral personality may be developed in the regular course of school work, without formal instruction in ethics.

RELIGIOUS AND CHURCH EDUCATION.

1350. **Fergusson, E. M.** The basis of Protestant Christian unity in religious education. Religious education, 16: 254–61, October 1921.

Paper read before the annual meeting of the Unitarian Sunday school society, May 1921.

1351. **Forrest, W. M.** Bible classes for high school pupils with credit towards graduation. Charlottesville, Va., The University, 1921. 17 p. 8°. (University of Virginia record. Extension series. vol. vii, no. 2, October 1921)

Writer is professor of biblical literature, University of Virginia, and official biblical examiner for the Virginia State board of education.

1352. **Hartley, Gertrude.** The use of projects in religious education. Philadelphia, Boston [etc.] The Judson press [1921] 91 p. plates. 12°.

1353. **Lowe, Frank M.** Religious vocations; a text-book for the church "class in occupations" and handbook of information for pastors, parents, teachers, and other counsellors of Christian youth. Boston, Chicago, United society of Christian endeavor [1921] 230 p. 12°.

1354. **McCormick, Patrick J.** Principles of educational reform. Catholic educational review, 19: 495–504, October 1921.

Paper read at the 18th annual convention of the Catholic educational association, held at Cincinnati, Ohio, July 1921.

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1355. **Snowden, James H.** The meaning of education. New York, Cincinnati, The Abingdon press [1921] 122 p. 16°.

1356. **Vogt, Paul L.** Church cooperation in community life. New York, Cincinnati, The Abingdon press [1921] 171 p. 12°.

MANUAL AND VOCATIONAL TRAINING.

1357. **Eastern arts association.** Proceedings, eleventh annual meeting, Boston, Mass., April 1, 2, and 3, 1920. 214 p. 8°. (M. W. Haynes, secretary, Bayonne, N. J.)

Contains: 1. R. O. Small: Vocational education, p. 15–23. 2. A. L. Barbour: Responsibility of the normal school in training teachers of drawing in relation to general education, p. 31–38. 3. Lucy H. Gillett: How can our work in foods be made more vital to the health of the child? p. 94–104. 4. O. D. Evans: Vocational guidance in the continuation school—"Helping the boy and girl to find themselves," p. 119–27. 5. Annie F. Slattery: The class in occupations as a correlative to work in the arts, p. 134–43. 6. C. D. Kingsley: The place of practical education in the modern high school, p. 143–52. 7. D. L. Hoopingarner: Social education and the labor problem, p. 168–74.

1358. Cooperation between industry and the school. National association of corporation training bulletin, 8: 447–67, October 1921.

The results of an inquiry made among the member-companies of the association for information about plans, systems, etc., used to provide the opportunity for students to form connections with business.

1359. **Edgerton, A. H.** Industrial-arts and prevocational education in our intermediate and junior-high schools. Industrial-arts magazine, 10: 365–71, October 1921.

The first of a series of four papers on industrial arts in junior high schools.

1360. **House, Julius T.** Two kinds of vocational education. American journal of sociology, 27: 222–25, September 1921.

Writer says there are two schools of thinkers who are interested in vocational education: "(*a*) Those who think in terms of the child and the job; (*b*) those who think in terms of the child and the social process." Analyzes and comments on these two attitudes.

1361. **Newman, C. T.** An experiment with a course in general technology. School review, 29: 603–9, October 1921.

Presents a course in (general technology) metal-working in the University high school of the University of Chicago. The method of presentation is by problematic question-lesson sheets. The pupil is "brought face to face with problems in much the same manner that problems will confront him in later life, when there may be no one to show him how to proceed."

1362. **Vaughn, S. J.** Organization and administration of part-time schools. Industrial-arts magazine, 10: 379–83, October 1921.

The organization of part-time schools should be completed before the opening of the school, and definite means taken to get the proper information to the public in general and to the employers for whom the pupils are working.

1363. **Vocational education association of the Middle West.** Report of Committee on teaching social science in high schools and industrial classes. [Chicago, Ill.] Pub. by the Vocational education association of the Middle West, 1921. 30 p. 8°. (Monographs on vocational education. 1921 series, no. 1.)

Members of committee: Ruth Mary Weeks, chairman; John R. Commons, Frank M. Leavitt.

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VOCATIONAL GUIDANCE.

1364. **Morelock, Oliver J.** The intermediate school and vocational guidance. Educational review, 62: 187–96, October 1921.

Emphasizes the value of the junior high school in the scheme of education. The so-called "intermediate school" will assure the further democratization of the public school system to meet the needs of all the children of the community.

WORKERS' EDUCATION.

1365. **National conference on workers' education in the United States.** *1st, New York,* 1921. Workers education in the United States; report of proceedings first National conference on workers' education in the United States. New York city, Workers' education bureau of America. 1921. 144 p. 8°. [Workers' education bureau series, no. 1.]

1366. **Allison, Brent D.** Labor education in Germany. Survey, 47: 55–57, October 8, 1921.

Describes among other things the establishment of the Academy of labor, which aims to become a labor university.

1367. **Budish, J. M.** Methods of mass education. Survey. 46: 678–79, September 16, 1921.

Says that the shop meeting is perhaps the best available means of promoting mass education.

1368. **Haldane, Richard Burdon,** *Viscount.* Education of the adult worker. Forum, 66: 282–87, October 1921.

Work in Great Britain described. Discusses education as a palliative of industrial unrest.

1369. **May, F. Stacy.** Workers' education at Amherst. Survey, 46: 675–76, September 16, 1921.

Describes the classes for workers in Springfield and Holyoke, Mass., conducted by Amherst College, in cooperation with local central labor unions.

AGRICULTURE.

1370. **Hurley, M. E.** Agriculture for city schools. Elementary school journal, 22: 44–48, September 1921.

Describes in particular the work of the Allendale school in Oakland, California.

HOME ECONOMICS.

1371. **Morgan, Agnes F.** A survey of the teaching of home economics in the public secondary schools of California. School review, 29: 574–85, October 1921.

The purpose of the study was to determine (*a*) the types of teachers giving instruction in home economics in these schools; and (*b*) the types and number of courses offered under this name.

PROFESSIONAL EDUCATION.

LAW.

1372. **Association of American law schools.** Handbook . . . and proceedings of the summer meeting held at St. Louis, Missouri, August 23–24, 1920, and of the eighteenth annual meeting held at Chicago, Illinois, December 28–30, 1920. 232 p. 8°. (H. C. Jones, secretary, University of Illinois, Urbana, Ill.)

Contains: 1. E. A. Gilmore: Some criticisms of legal education, p. 140–56. 2. Report of the committee on the status of the law teacher, p. 166–77.

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MEDICINE AND NURSING.

1373. **Gile, John M.** Medical education and the medical supply. Boston medical and surgical journal, 185: 387–90, September 29, 1921.

Reviews the history of medical education, and the demand for physicians in rural districts.

1374. **Macdonald, V. M.** Mental health of children. American journal of nursing, 22: 6–8, October 1921.

First paper of a series. A discussion of mental disorder and methods of prevention.

1375. **Olmstead, Katherine.** International training at Bedford college. Nation's health, 3: 494–95, September 1921.

Projected course of study in public health nursing at Bedford college for women, University of London.

1376. **Painter, Charles F.** The interest of the public in medical education. Boston medical and surgical journal, 185: 427–32, October 13, 1921.

Discusses some of the defects in present-day medical education.

1377. **Skillern, Ross H.** Postgraduate work in laryngology. Journal of the American medical association, 77: 1145–46, October 8, 1921.

1378. **Vincent, George E.** The passing of the country doctor. Forum, 66: 300–7, October 1921.

Describes the readjustments of medical education to changed conditions during the past 20 or 30 years. Says that the reluctance of young doctors to settle in rural communities is one of the most disquieting results of the raising of standards in medical training.

1379. **Watson, Grace.** Practical nursing—yesterday and to-day. American journal of nursing, 22: 25–31, October 1921.

By practical nursing of yesterday is meant the average standard of nursing work in hospitals of a period of 20 or more years. Discusses also the work of today.

DENTISTRY AND PHARMACY.

1380. **American conference of pharmaceutical faculties.** Proceedings of the twenty-first annual meeting, Washington, D. C., May 5–6, 1920. 200 p. 8°. (Theodore J. Bradley, secretary-treasurer, College of pharmacy, Boston, Mass.)

1381. **American institute of dental teachers.** Proceedings of the twenty-eighth annual meeting . . . held at Indianapolis, Indiana, January 24–26, 1921. Published by American institute of dental teachers. 157 p. 8°. (Abram Hoffman, secretary, 381 Linwood Avenue, Buffalo, N. Y.)

Contains: 1. A. D. Black: Progress in dental education, p. 14–25. 2. G. S. Millberry: Training dental teachers, p. 37–42. 3. G. B. Denton: Technical composition and scientific methodology for dental students, p. 69–77. 4. F. C. Waite: The dental school catalogue, its content and arrangement, p. 87–100

1382. **National association of dental faculties.** Proceedings of . . . thirty-seventh annual meeting, held at Boston, Mass., August 20 and 21, 1920. 115 p. 8°. (DeL. L. Hill, secretary, Atlanta, Ga.)

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CIVIC EDUCATION.

1383. **American school citizenship league. History committee.** An American citizenship course in United States history. General course for grades I–VIII, introducing a program of type studies. Published for the American school citizenship league. New York, Chicago [etc.] C. Scribner's sons [1921] vi, 167 p. 12°.

Members of committee: W. F. Gordy, chairman; P. P. Claxton, C. E. Chadsey, J. H. Van Sickle, Mr. and Mrs. J. W. Hall, Fannie Fern Andrews.

CONTENTS.—To the teacher.—Grades I, II, and III: Primitive life and the beginnings of things.—Grades IV and V: Biographies of representative men.—Grade VI: European beginnings of American history.—Grade VI: Exploration, colonization, independence, confederation, and the Constitution.—Grade VIII: The development of the United States under the Constitution.—Bibliography, Grades IV–VIII.

1384. **Armentrout, W. D.** A project in elementary-school citizenship. Elementary school journal, 22: 118–25, October 1921.

Discusses the attempt to organize student government in the elementary training school of the Colorado state teachers' college. Presents the constitution and by-laws of the junior council.

1385. **Barnes, Julius H.** Teaching current events as training for citizenship. American review of reviews, 64: 385–87, October 1921.

1386. **Smith, R. R.** Teaching civics as a science in the Joliet township high school. Pedagogical seminary, 28: 295–302, September 1921.

1387. **White, E. M.** Civics in continuation schools. Journal of education and School world (London) 53: 634–36, October 1, 1921.

Stresses curricula based on conditions in England and the British commonwealth. Gives a bibliography on the League of Nations.

AMERICANIZATION.

1388. **Breckinridge, Sophonisba P.** New homes for old. New York and London, Harper & brothers, 1921. xv, 356 p. plates. 12°. (Americanization studies. Allen T. Burns, director)

1389. **Massachusetts. Department of education. Division of university extension.** Thirty lessons in naturalization and citizenship; an outline for teachers of adult immigrants. Boston, Mass., 1921. 119 p. 8°. (Commonwealth of Massachusetts. Bulletin of the Department of education. vol. vi, no. 6, whole no. 39, November 1921)

EDUCATION OF WOMEN.

1390. **Adams, Elizabeth Kemper.** Women professional workers; a study made for the Women's educational and industrial union. New York, The Macmillan company, 1921. xiv, 467 p. 12°.

The author first analyzes and defines the nature of a profession, and discusses the general subject of women as professional workers. Next in order after the "learned professions"—medicine, law, the ministry—the various other groups of professional services open to women are described. These services are health other than medicine; food and living; community, civic, and government; social; personnel or employment; industrial and labor; commercial—office and mercantile, and special; information (journalism, etc.); fine and applied arts; technical; library and museum; teaching and other educational services. The volume concludes with a selected and annotated reading list. The introduction is by Samuel P. Capen.

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1391. **Charters, W. W.** The reorganization of women's education. Educational review, 62: 224–31, October 1921.

Criticises the alleged shortcomings of the public school curriculum, and then discusses the activities of the woman's college.

1392. **Hamilton, Edith.** Schools and daughters. North American review, 214: 518–26, October 1921.

Discusses the choice of a school or college for girls.

NEGRO EDUCATION.

1393. **Boyer, Philip Albert.** The adjustment of a school to individual and community needs. Philadelphia, Pa., 1920. 141 p. tables. 8°.

Thesis (Ph. D.)—University of Pennsylvania, 1920.
A study of the Stanton-Arthur school, which serves a negro section in Philadelphia.

1394. **Miller, Kelly.** Education of the negro in the North. Educational review, 62: 232–38, October 1921.

1395. **Snyder, Howard.** Paradise negro school. Yale review, 11: 158–69, October 1921.

Describes a negro rural school in Mississippi.

1396. **Taylor, R. R.** Tuskegee's mechanical department. Southern workman, 50: 457–68, October 1921.

Methods of teaching the trades, etc., at Tuskegee institute. Illustrated.

EDUCATION OF DEAF.

1397. **Bickler, Mary H.** How a deaf child was taught speech-reading and speech. Volta review, 23: 455–70, October 1921.

Concluded from September number.

1398. **Goodwin, Elizabeth.** An experiment in teaching language on individual lines. Volta review, 23: 435–45, October 1921.

An experiment in teaching deaf children, with general observations on language instruction.

1399. **Manning, Arthur C.** Religious education of the deaf. American annals of the deaf, 66: 354–61, September 1921.

EXCEPTIONAL CHILDREN.

1400. **National conference on the education of truant, backward, dependent and delinquent children *and the* American association of public officials of charity and correction.** Proceedings of the joint conference of the seventeenth national conference. . . . Held in Chicago, St. Charles, Geneva, Riverside, and Mooseheart, Illinois, June 21–25, 1920. (Secretaries, H. W. Moore, Florence, S. C., and W. G. Theurer, Philadelphia, Pa.)

Contains: 1. David Kinley: State universities and State welfare institutions, p. 5–9. 2. W. L. Kuser: The school's responsibility to the pupil, p. 13–20. 3. E. A. Doll: Intelligence and industrial tests in institutional administration, p. 35–42.

1401. **Clark, Willis W.** Success records of prisoners and delinquents. Journal of delinquency, 6: 443–52, July 1921.

Study based on reports of many of the larger correctional institutions on file in the library of the California bureau of juvenile research.

1402. **Gesell, Arnold.** Exceptional children and public school policy; including a mental survey of the New Haven elementary schools. New Haven, Yale university press, 1921. 66 p. diagrs., fold. map. 8°.

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1403. **Springer, Ethel M.** Children deprived of parental care; a study of children taken under care by Delaware agencies and institutions. Washington, Government printing office, 1921. 96 p. incl. tables. 8°. ([U. S.] Children's bureau. Dependent, defective and delinquent classes series no. 12. Bureau publication no. 81.)

EDUCATION EXTENSION.

1404. **Great Britain. Board of education.** Humanism in the continuation school. London, H. M. stationery office, 1921. 135 p. 12°. (Educational pamphlets, no. 43)

Written by J. Dover Wilson, after a study of the working of evening continuation schools in England with special reference to the question of using the limited opportunities of those schools to widen the intellectual horizon of young people who cease full-time education at the age of 14.

1405. **Yeaxlee, Basil A.** The universities and the people. Contemporary review, 120: 516–24, October 1921.

The service of the British universities for the people, especially through educational settlements.

LIBRARIES AND READING.

1406. **Bowker, R. R.** Some children's librarians. Library journal, 46: 787–90. October 1, 1921.

This article dealing with pioneers in the Eastern field is to be continued in a second paper on other children's librarians, chiefly in the West. Illustrated by portraits.

1407. **Guilfoile, Elizabeth.** Using the public library in the teaching of reading. Elementary school journal, 22: 126–131. October 1921.

Work of the C class of the fourth grade at the Avondale school, Cincinnati, Ohio. Progress in selection, care, and use of books. Class gained in reading ability.

BUREAU OF EDUCATION: RECENT PUBLICATIONS.

1408. Education in homeopathic medicine during the biennium 1918–1920; by W. A. Dewey. Washington, 1921. 7 p. (Bulletin, 1921, no. 18)

Advance sheets from the Biennial survey of education in the United States, 1918–1920.

1409. Education of the deaf; by Percival Hall. Washington, 1921. 16 p. (Bulletin 1921, no. 14)

Advance sheets from the Biennial survey of education in the United States, 1918–1920.

1410. Facilities for foreign students in American colleges and universities; by Samuel Paul Capen, former specialist in higher education, Bureau of education. Washington, 1921. 269 p. plates. (Bulletin, 1920, no. 39)

1411. Higher education 1918–1920; by George F. Zook, specialist in higher education, Bureau of education. Washington, 1921. 46 p. (Bulletin, 1921, no. 21)

Advance sheets from the Biennial survey of education in the United States, 1918–1920.

1412. Medical education 1918–1920; by N. P. Colwell. Washington, 1921. 15 p. (Bulletin, 1921, no. 15)

Advance sheets from the Biennial survey of education in the United States, 1918–1920.

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1413. Part-time education of various types. A report of the Commission on the reorganization of secondary education, appointed by the National education association. Washington, 1921. 22 p. (Bulletin, 1921, no. 5)

This report presents various types of part-time education, including continuation classes, and indicates some of the administrative features desirable. One section is devoted to Educational and vocational guidance, with a discussion of the functions of a director of vocational guidance and of vocational counselors in the schools.

1414. Proceedings of the fifth and sixth annual meetings of the National council of primary education, Cleveland, Ohio, February 24, 1920, and Des Moines, Iowa, March 3, 1921. Washington, 1921. 44 p. (Bulletin, 1920, no. 47)

1415. Special features in the education of the blind during the biennium 1918–1920; by Edward E. Allen. Washington, 1921. 14 p. (Bulletin, 1921, no. 16)

Advance sheets from the Biennial survey of education in the United States, 1918–1920.

1416. Suggestions for a program for health teaching in the elementary schools; by J. Mace Andress and Mabel C. Bragg. Washington, 1921. 107 p. illus. (Health education series, no. 10)

1417. Suggestions for the reorganization of the schools in Currituck county, North Carolina; by Katherine M. Cook. Washington, 1921. 31 p. map, tables. (Bulletin, 1921, no. 24)

A study of conditions of the public school system of a rural county in North Carolina, with suggestions for its improvement.

1418. Survey of the schools of Wilmington, Delaware. Part II.—I. The elementary courses. II. Secondary education. III. Special departments and subjects. Washington, 1921. 191 p. (Bulletin, 1921, no. 2)

1419. The teaching of civics as an agency for community interest and citizenship; by John James Tigert, United States Commissioner of education. Washington, 1921. 10 p.

Makes suggestions for a more practical course of study in civics, and for the adoption of the project method in civics instruction.

1420. The visiting teacher; by Sophia C. Gleim. Washington, 1921. 23 p. (Bulletin, 1921, no. 10)

Visiting teacher and home and school bibliography: p. 18–23.

Summarizes the method of establishing closer relations between the home and school followed by various States and cities in providing for visiting teachers.

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DEPARTMENT OF THE INTERIOR
U. S. BUREAU OF EDUCATION

BULLETIN, 1921, No. 50

ENGINEERING EDUCATION AFTER THE WAR

By

ARTHUR M. GREENE, JR.
RENSSELAER POLYTECHNIC INSTITUTE, TROY, N. Y.

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ENGINEERING EDUCATION AFTER THE WAR.

The period covered by this paper followed the demobilization of that experiment in education under war conditions known as the Students' Army Training Corps.

During the early part of 1917 many engineering students withdrew from the school of engineering to enter different branches of the Army and Navy of the United States, and others at this time, and even during the previous years from the outbreak of the World War in 1914, withdrew to enter the service of our allies or to become Red Cross drivers or workers. These withdrawals, followed by withdrawals due to the application of the Selective Service Draft Law, made it clear that steps must be taken to provide the Nation with men trained in engineering to fill the numerous places created by the war in the service of the United States and in the industries.

For the purpose of conserving the engineers in training, the Engineer Corps of the United States Army made provision to enlist engineering students of the proper age in a Reserve Officers' Corps and to assign them back to their colleges to complete their engineering work. This did not prove entirely satisfactory, and its inadequacy was soon manifest. To care for all branches of the service, and to train men as officers, the colleges and universities of the country were organized to receive and train members of the Students' Army Training Corps.

STUDENTS' ARMY TRAINING CORPS.

During the summer of 1918 it became evident that, with the application of the selective draft law, steps would have to be taken to preserve the educational institutions of the country and to supply the country with trained men. After a number of conferences between educators and Government officers, the War Department organized a Committee on Education and Special Training, consisting of Col. Robert I. Rees, General Staff Corps; Col. John H. Wigmore, Provost Marshal General's Office; Lieut. Col. Grenville Clark, Adjutant General's Office; and Maj. Wm. R. Orton, War Plans Division, with Ralph Barton Perry as executive secretary. In addition to this committee, an advisory board representing the educational interests was formed, composed of President James R. Angell, Samuel P. Capen, James W. Dietz, Hugh Frayne, Charles R. Mann, Raymond H. Pearson, and Herman Schneider. About the end of July, 1918, after plans were prepared for the use of the colleges, the Secretary of War appointed President R. C. Maclaurin, of the Massachusetts Institute of Technology, Director of College Training. The country was divided into 12 districts for this purpose, with a subdirector in each district. Practically all of the colleges of the United States entered into contracts with the Government to give instruction to men who were to be members of the Students' Army Training Corps. The various institutions made contracts for the subsistence, housing, and education of members of this corps, together with contracts for expenses connected with the construction of temporary buildings or making alterations in existing buildings belonging to the colleges, for the purpose of fitting them to the needs of the Government.

The Students' Army Training Corps was raised under authority of the act of Congress approved May 18, 1917, commonly known as the Selective Service Act, authorizing the President to increase temporarily the Military Establishment of the United States as amended by the act of August 31, 1918, and under General Order No. 79 of the War Department dated August 24, 1918, which was as follows:

Under the authority conferred by sections 1, 2, 8, and 9 of the act of Congress authorizing the President to increase temporarily the Military Establishment of the United States, approved May 18, 1917, the President directs that for the period of the existing

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emergency there shall be maintained by voluntary induction and draft a Students' Army Training Corps. Units of this corps will be authorized by the Secretary of War at educational institutions that meet the requirements laid down in special regulations.

The object of establishing the Students' Army Training Corps was to utilize effectively the plant, equipment, and organization of the colleges for selecting and training officer candidates and technical experts for service in the existing emergency. For purposes of military organization the members of the corps formed single units, but for purposes of instruction the unit consisted of one or more sections, according to the type of educational training given.

The collegiate section (known as section A) was authorized in any civil educational institution which required for admission to its regular curricula graduation from a standard four-year secondary school or an equivalent, and provided a general or professional curriculum covering at least two years of not less than 32 weeks each and had a student attendance sufficient to maintain a collegiate section of a strength of at least 100 men. Collegiate sections of the Students' Army Training Corps were organized in colleges of arts and sciences, technology, engineering, mines, agriculture and forestry, business administration, industry and commerce, pharmacy, veterinary medicine, education, law, medicine, dentistry and in graduate schools, normal schools, junior colleges, and technical institutes.

The vocational section (known as section B) was authorized in institutions having adequate equipment.

A registrant of the Students' Army Training Corps became an enlisted man in the Army of the United States, or, on the establishment of naval units, in the Navy of the United States. This induction was voluntary, under the selective service regulations. Upon induction members of the Students' Army Training Corps were placed on active duty status, and the Committee on Education and Special Training entered into contracts with educational institutions for the quartering, subsistence, and instruction of such men. It was also understood that from time to time members of the corps might be assigned to training camps, training schools, depot brigades, or to do special technical work at collegiate institutions. It was also planned to give consideration to the preference of the registrants to the branch of service which they would ultimately enter.

The administration of the corps was carried on by the War Department through its Committee on Education and Special Training of the Training and Instruction Branch, War Plans Division, General Staff, assisted by the Advisory Educational Board, together with educational directors, district educational directors, and special advisers. The War Department provided an officer of the Army at each college to serve as commanding officer, and the commanding officer and other officers assigned to duty with different units were directed to observe the general usages of the various institutions affecting the duties and obligations of the members of the faculty or other academic instructors. They were not permitted to undertake any instructional or administrative duties in the institution other than those connected with the military work of the corps. The military officers were assigned to the duty of enforcing military discipline, but no authority was given them to direct or interfere with purely educational matters.

The original plan of training consisted of 11 hours of military studies, including drill, theoretical and military instruction, and physical training, and 42 hours per week for allied subjects. These 42 hours included lectures, recitations, laboratory instruction, and necessary preparation therefor. After two terms of work the arrangement provided for 6 hours of military training and 47 hours of study of the allied subjects. It will be seen later that suggested courses for technical schools were submitted by the committee from which the actual courses given at an institution were planned and submitted for approval to the regional director.

The Committee on Education and Special Training issued from time to time circulars regarding the treatment of the various subjects in accordance with the aims of the War Department.

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The allied subjects mentioned above included the following: English, French, German, mathematics, physics, chemistry, biology, psychology, geology, geography, topography and map drawing, meteorology, astronomy, hygiene, sanitation, descriptive geometry, mechanical and free-hand drawing, surveying, economics, accounting, history, international law, military law and government. In the case of the technical and professional schools, provisions were made for approving a general program containing subjects other than those included in the above list, and also permission could be granted any institution for the recognition as an allied subject one subject outside the foregoing list provided it occupied not more than three hours per week in lectures and recitations combined.

A special course in war issues was demanded in all programs of study for section A. This was to cover three classroom hours per week for two terms. This course was intended to give students a clear understanding of the causes of the war and the various steps previous to the beginning of hostilities.

In section B the required hours were as follows: Military subjects, including drill and physical training, 15½ hours; vocational subjects, 33 hours; war issues, 1 hour.

The general scheme for work in section A covered a period of eight terms of 12 weeks each, with a vacation period of one week at the end of each term. In this way the academic or technical work would be done in a period of two years, and it was hoped that the men thus trained would be prepared for technical work or for officer material.

The proposed schedules of studies for the four engineering courses as proposed by the Committee on Educational and Special Training are given herewith:

CIVIL ENGINEERING.

FIRST TERM.	Hours per week.
Mathematics	12
Chemistry	12
Drawing and descriptive geometry or surveying	9
War issues and English composition	9
Military training	11
Total	53

SECOND TERM.	
Mathematics	12
Chemistry	12
Drawing and descriptive geometry or surveying	9
War issues and English composition	9
Military training	11
Total	53

THIRD TERM.	
Mathematics	12
Physics	14
Mechanics and mechanism	15
Drawing and descriptive geometry or surveying	6
Military training	6
Total	53

FOURTH TERM.	
Mathematics	9
Physics	14
Mechanics	15
Surveying or drawing	9
Military training	6
Total	53

FIFTH TERM.	
Theory of structures	6
Materials	10
Railroad engineering (including drafting and field work)	15
Highway engineering	6
Map reading and topographical drawing	2
Geology	8
Military training	6
Total	53

SIXTH TERM.	
Theory of structures	9
Bridge design	4
Railroad engineering (including drafting)	9
Hydraulics	13
Electrical engineering	12
Military training	6
Total	53

SEVENTH TERM.	
Theory of structures	12
Bridge design	10
Railroad engineering	4
Heat engineering	12
Hydraulic and sanitary engineering	9
Military training	6
Total	53

EIGHTH TERM.	
Theory of structures	12
Hydraulic and sanitary engineering and design	16
Heat engineering	9
Railroad design	3
Sanitary science and public health	1
Business law and accounting	6
Military training	6
Total	53

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Courses divided between surveying and drawing were to be given in accordance with the season of year in which they came and the number registered. The total time allotment to surveying was to be equivalent to 12 hours per week for one term.

MECHANICAL ENGINEERING.

FIRST TERM	Hours per week.
Mathematics	12
Drawing and descriptive geometry	9
Chemistry	12
War issues and English composition	9
Military training	11
Total	53

SECOND TERM.	
Mechanism	9
Mathematics	12
Chemistry	12
War issues and English composition	9
Military training	11
Total	53

THIRD TERM.	
Mechanism and mechanical engineering drawing	10
Mathematics	12
Physics	14
Shopwork	4
Surveying, map reading, and topographical drawing	7
Military training	6
Total	53

FOURTH TERM.	
Applied mechanics	12
Mathematics	12
Mechanical engineering drawing	5
Physics and physical laboratory	14
Shopwork	4
Military training	6
Total	53

FIFTH TERM.	
Heat engineering and engineering laboratory	15
Electrical engineering	10
Applied mechanics	12
Machine drawing	6
Shopwork	4
Military training	6
Total	53

SIXTH TERM.	
Heat engineering and engineering laboratory	15
Hydraulics	11
Applied mechanics	10
Electrical engineering laboratory	7
Shopwork	4
Military training	6
Total	53

SEVENTH TERM.	
Materials of engineering and testing materials laboratory	12
Mechanism of machines	5
Machine design	10
Applied mechanics	10
Surveying or refrigeration	2
Shopwork	4
Engineering laboratory	4
Military training	6
Total	53

EIGHTH TERM.	
Power plant design	5
Industrial plants (including heating and ventilation)	16
Mechanics of engineering	7
Engineering laboratory	10
Gas motors	5
Shopwork	4
Military training	6
Total	53

In place of gas motors, 60 hours (total) of laboratory and lecture work may be assigned to heat treatment.

ELECTRICAL ENGINEERING.

FIRST TERM.	Hours per week.
Mathematics	12
Drawing and descriptive geometry	9
Chemistry	12
War issues and English composition	9
Military training	11
Total	53

SECOND TERM.	
Mathematics	12
Chemistry	12
Drawing and descriptive geometry	9
War issues and English composition	9
Military training	11
Total	53

THIRD TERM.	Hours per week.
Mathematics	12
Physics	14
Mechanics and applied mechanics	12
Mechanical engineering drawing	9
Military training	6
Total	53

FOURTH TERM.	
Mathematics	12
Physics	14
Elements of electrical engineering	2
Applied mechanics	12
Surveying, map reading, and topographical drawing	7
Military training	6
Total	53

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FIFTH TERM.	Hours per week.
Elements of electrical engineering and direct-current machinery	15
Electrical engineering laboratory	8
Heat engineering	9
Materials of engineering	6
Shopwork	9
Military training	6
Total	53

SIXTH TERM.	
Variable and alternating currents	12
Electrical engineering laboratory	12
Heat engineering	9
Mechanical engineering laboratory	8
Structures or machine design	6
Military training	6
Total	53

SEVENTH TERM.	Hours per week.
Alternating current machinery	15
Electrical engineering laboratory	8
Hydraulics	9
Electrical transmission (power and telephone)	15
Military training	6
Total	53

EIGHTH TERM.	
Alternating current machinery	8
Electrical engineering laboratory	6
Power stations (steam and hydraulic)	13
Motor applications, lighting and storage batteries	16
Business law and accounting	4
Military training	6
Total	53

CHEMICAL ENGINEERING.

FIRST TERM.	Hours per week.
Inorganic chemistry	21
Mathematics	12
War issues and English composition	9
Military training	11
Total	53

SECOND TERM.	
Inorganic chemistry and qualitative analysis	21
Mathematics	12
War issues and English composition	9
Military training	11
Total	53

THIRD TERM.	
Qualitative analysis	12
Quantitative analysis	2
Mathematics	12
Physics	14
General engineering drawing	7
Military training	6
Total	53

FOURTH TERM.	
Quantitative analysis	14
Elements of organic chemistry	6
Physics	12
Theoretical and applied mechanics	7
General engineering drawing	8
Military training	6
Total	53

FIFTH TERM.	Hours per week.
Quantitative analysis	15
Physical chemistry	17
Theoretical and applied mechanics	15
Military training	6
Total	53

SIXTH TERM.	
Physical chemistry	17
Organic chemistry	18
Elements of electrical engineering	12
Military training	6
Total	53

SEVENTH TERM.	
Organic chemistry	16
Chemical technology	8
Proximate technical analysis	8
Elements of thermodynamics and heat engineering	15
Military training	6
Total	53

EIGHTH TERM.	
Chemical technology	24
Chemical warfare	1
Engineering materials	12
Mechanical engineering laboratory	10
Military training	6
Total	53

To show how closely the schedule suggested by the Committee on Education and Special Training was carried out in one instance, the schedules given below were submitted by the Rensselaer Polytechnic Institute and approved by the regional director, President Charles Alexander Richmond, of Union College, Schenectady, N. Y.

The numbers given after courses represent clock hours in the following order: Recitation, preparation, lecture, laboratory, followed by total number of hours.

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RENSSELAER POLYTECHNIC INSTITUTE.

CIVIL ENGINEERING.[1]

FIRST TERM.	Hours per week.
Algebra 4-8-0-0	12
Chemistry 2-4-2-4	12
Drawing 1-2-0-6	9
War issues 3-6-0-0	9
Military training	11
Total	53

SECOND TERM.	
Trigonometry and analytics 4-8-0-0	12
Chemistry 0-0-0-12	12
Descriptive geometry 2-4-0-3	9
War issues 3-6-0-0	9
Military training	11
Total	53

THIRD TERM.	
Analytics and calculus 4-8-0-0	12
Physics 2-4-4-4	14
Mechanism 3-6-0-0	9
Surveying 1-2-0-3	6
Descriptive geometry 1-2-0-3	6
Military training	6
Total	53

FOURTH TERM.	
Calculus 4-8-0-0	12
Physics 2-4-4-4	14
Mechanics 2-4-0-0	6
Railroad engineering 2-4-0-0	6
Surveying 1-2-0-6	9
Military training	6
Total	53

FIFTH TERM.	
Theoretical mechanics 2-4-0-0	6
Applied mechanics 4-8-0-0	12
Materials laboratory 0-0-0-4	4
Railroad engineering 0-0-0-9	9

FIFTH TERM—continued.	Hours per week.
Highways 2-4-0-0	6
Map reading and top drawing 0-0-0-2	2
Geology 2-4-2-0	8
Military training	6
Total	53

SIXTH TERM.	
Structures and bridge design 4-8-1-0	13
Railroad engineering 2-4-0-0	6
Geodesy 1-2-0-1	4
Hydraulics 4-8-0-0	12
Electrical engineering 2-4-2-4	12
Military training	6
Total	53

SEVENTH TERM.	
Bridge design 4-8-0-0	12
Reinforced concrete 3-6-1-0	10
Steam engines 3-6-0-0	9
Power plants 0-0-0-3	3
Business law and accounting 1-2-1-0	4
Hydraulic and sanitary engineering 3-6-0-0	9
Military training	6
Total	53

EIGHTH TERM	
Bridge design 0-0-0-12	12
Hydraulic and sanitary engineering design 2-4-0-4	10
Thermodynamics 2-4-0-0	6
Mechanical laboratory 0-0-0-2	2
Railroad engineering 0-0-0-9	9
Machine design 0-0-0-2	2
Sanitary science and public health 1-2-1-0	4
Astronomy 0-0-0-2	2
Military training	6
Total	53

MECHANICAL ENGINEERING.[1]

FIRST TERM.	Hours per week.
Algebra 4-8-0-0	12
Chemistry 2-4-2-4	12
Drawing 1-2-0-6	9
War issues 3-6-0-0	9
Military training	11
Total	53

SECOND TERM.	
Trigonometry and analytics 4-8-0-0	12
Steam engineering 3-6-0-0	9
Mechanism 1-2-0-0	3
Descriptive geometry 2-4-0-3	9
War issues 3-6-0-0	9
Military training	11
Total	53

THIRD TERM.	Hours per week.
Analytics and calculus 4-8-0-0	12
Physics 2-4-4-4	14
Mechanism 3-6-0-0	9
Chemistry 0-0-0-12	12
Military training	6
Total	53

FOURTH TERM.	
Calculus 4-8-0-0	12
Physics 2-4-4-4	14
Mechanics 2-4-0-0	6
Surveying 1-2-0-4	7
Shop 0-0-0-8	8
Military training	6
Total	53

[1] The numbers given after the courses represent the clock hours in the following order: Recitation, preparation, lecture, laboratory, followed by total number of hours.

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FIFTH TERM.	Hours per week.
Theoretical mechanics 2-4-0-0	6
Applied mechanics 4-8-0-0	12
Thermodynamics 3-6-0-0	9
Electrical engineering 3-6-1-0	10
Boilers 2-4-0-0	6
Shop 0-0-0-4	4
Military training	6
Total	53

SIXTH TERM.	
Structures 3-6-0-0	9
Hydraulics 4-8-0-0	12
Heat engines 3-6-0-0	9
Naval architecture 0-0-0-2	2
Mechanical laboratory 0-0-0-4	4
Electrical laboratory 0-0-0-7	7
Shop 0-0-0-4	4
Military training	6
Total	53

SEVENTH TERM.	
Metallurgy 3-6-0-0	9
Materials laboratory 0-0-0-3	3
Graphics of machinery 1-2-0-2	5
Machine design 2-4-0-4	10
Steam engine design 3-6-0-0	9
Refrigeration 1-2-0-0	3
Business law and accounting 1-2-1-0	4
Mechanical laboratory 0-0-0-4	4
Military training	6
Total	53

EIGHTH TERM.	
Power plants 1-2-0-2	5
Industrial plants 3-6-0-0	9
Marine engineering 1-2-0-0	3
Heating and ventilation 2-4-0-0	6
Automobile design 0-0-0-4	4
Gas engine 2-4-0-0	6
Hydraulic turbines 1-2-0-0	3
Shop 0-0-0-8	8
Mechanical laboratory 0-0-0-3	3
Military training	6
Total	53

ELECTRICAL ENGINEERING.[1]

FIRST TERM.	Hours per week.
Algebra 4-8-0-0	12
Chemistry 2-4-2-4	12
Drawing 1-2-0-6	9
War issues 3-6-0-0	9
Military training	11
Total	53

SECOND TERM.	
Trigonometry and analytics 4-8-0-0	12
Steam engineering 3-6-0-0	9
Mechanism 1-2-0-0	3
Descriptive geometry 2-4-0-3	9
War issues 3-6-0-0	9
Military training	11
Total	53

THIRD TERM.	
Analytics and calculus 4-8-0-0	12
Physics 2-4-4-4	14
Mechanism 3-6-0-0	9
Chemistry 0-0-0-12	12
Military training	6
Total	53

FOURTH TERM.	
Calculus 4-8-0-0	12
Physics 2-4-4-4	14
Elements of electrical engineering 0-0-2-0	2
Mechanics 2-4-0-0	6
Shop 0-0-0-6	6
Surveying 1-2-0-4	7
Military training	6
Total	53

FIFTH TERM.	Hours per week.
Theoretical mechanics 2-4-0-0	6
Applied mechanics 4-8-0-0	12
Elements of electrical engineering and direct current machinery 5-10-0-0	15
Electrical engineering laboratory 0-0-0-8	8
Thermodynamics 2-4-0-0	6
Military training	6
Total	53

SIXTH TERM.	
Variable and alternating current 4-8-0-0	12
Electrical engineering laboratory 0-0-0-12	12
Hydraulics 4-8-0-0	12
Mechanical laboratory 0-0-0-5	5
Machine design 1-2-0-3	6
Military training	6
Total	53

SEVENTH TERM.	
Alternating current machinery 2-6-4-3	15
Electrical engineering laboratory 0-0-0-8	8
Electrical transmission 5-10-0-0	15
Business law and accounting 1-2-1-0	4
Boilers 1-2-0-2	5
Military training	6
Total	53

EIGHTH TERM.	
Alternating current machinery, 2-4-2-0	8
Electrical engineering laboratory, 0-0-0-6	6
Power plants, mechanical, 1-2-0-2	5
Power plants, electrical, 1-2-0-2	5
Hydraulic turbines 1-2-0-0	3
Motor application, lighting and storage batteries 3-6-3-3	15
Heat engines 1-2-0-2	5
Military training	6
Total	53

[1] The numbers given after the courses represent the clock hours in the following order: Recitation, preparation, lecture, laboratory, total.

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CHEMICAL ENGINEERING.[1]

FIRST TERM.	Hours per week.
Algebra 4-8-0-0	12
Chemistry 2-4-2-4	12
Drawing 1-2-0-6	9
War issues 3-6-0-0	9
Military training	11
Total	53

SECOND TERM.	
Trigonometry and analytics 4-8-0-0	12
Chemistry 2-4-0-0	6
Chemistry 0-0-0-12	12
Mechanical drawing, 0-0-0-3	3
War issues 3-6-0-0	9
Military training	11
Total	53

THIRD TERM.	
Analytics and calculus 4-8-0-0	12
Physics 2-4-4-4	14
Chemistry, quantitative 3-6-0-0	9
Chemistry, qualitative 0-0-0-12	12
Military training	6
Total	53

FOURTH TERM.	
Calculus 4-8-0-0	12
Physics 2-4-4-4	14
Chemistry 2-4-0-9	15
Mechanics 2-4-0-9	6
Military training	6
Total	53

FIFTH TERM.	
Theoretical mechanics 2-4-0-0	6
Applied mechanics 4-8-0-0	12
Electrical engineering 2-6-2-0	10
Chemistry, organic 3-6-0-10	19
Military training	6
Total	53

SIXTH TERM.	
Structures 1-2-0-0	3
Electrical engineering laboratory 0-0-0-7	7
Hydraulics 4-8-0-0	12
Machine design 1-2-0-3	6
Physical chemistry 3-6-0-8	17
Gas analysis 0-0-0-2	2
Military training	6
Total	53

SEVENTH TERM.	
Metallurgy 3-6-0-0	9
Business law and accounting 1-2-1-0	4
Materials laboratory 0-0-0-3	3
Steam engines 2-4-0-0	6
Water analysis 0-0-0-10	10
Electro-chemistry 1-2-1-4	8
Physical chemistry 1-2-0-0	3
Mechanical laboratory 0-0-0-4	4
Military training	6
Total	53

EIGHTH TERM.	
Sewage 1-2-1-0	4
Power plants 1-2-0-2	5
Thermodynamics 2-4-0-0	6
Surveying and topography 1-2-0-4	7
Mechanism 2-4-0-0	6
Food analysis 1-2-0-4	7
Industrial chemistry 2-4-0-2	8
Sanitary science and public health 1-2-1-0	4
Military training	6
Total	53

To care for men who had been at the Rensselaer Polytechnic Institute for one or two years, the following schedules were arranged.

Work was to be done as of third terms for men who had been at the institute one year of two terms and who were taking the third term at this time. Numbers after courses have the same meaning as given on complete schedules, viz, clock hours devoted to recitations, preparation, lecture, laboratory, followed by total.

CIVIL ENGINEERS.	Hours per week.
Calculus, 4-8-0-0	12
Physics, 2-4-2-2	10
Mechanism, 5-10-0-0	15
Highways, 2-4-0-0	6
Surveying, 1-2-0-1	4
Military training	6
Total	53

MECHANICAL AND ELECTRICAL ENGINEERS.	Hours per week.
Calculus, 4-8-0-0	12
Physics, 2-4-0-2	8
Mechanism, 5-10-0-0	15
Chemical laboratory, 0-0-0-9	9
Topographical drawing,[2] 0-0-0-3	3
Military training	6
Total	53

[1] The numbers given after the courses represent the clock hours in the following order: Recitation, preparation, lecture, laboratory, followed by total.

[2] Shop taken in past summer.

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CHEMICAL ENGINEERS.	Hours per week.
Calculus, 4-3-0-0	12
Physics, 2-4-0-2	8
Chemistry, 3-6-0-12	21
Mechanics, 2-4-0-0	6
Military training	6
Total	53

War issues for this class were to be given in the fifth and sixth terms.

The work to be done was considered as of the fifth term for men who had been at the institute for two years, or four terms, and who were taking the fifth term at this time.

CIVIL ENGINEERS.	Hours per week.
Physics, 2-4-0-4	10
Mechanics, 5-10-0-0	15
Highways, 1-2-1-0	4
Topographical drawing, 0-0-0-1	1
Mineralogy and geology, 2-4-2-0	8
Railroad engineering, 3-6-0-0	9
Military training	6
Total	53

MECHANICAL ENGINEERING.	
Thermodynamics, 3-6-0-0	9
Boilers, 2-4-0-1	7
Electrical engineering, 3-6-1-0	10
Mechanics, 5-10-0-0	15
Mechanical laboratory, 0-0-0-6	6
Military training	6
Total	53

ELECTRICAL ENGINEERS.	Hours per week.
Elements of electrical engineering and direct current 5-10-0-0	15
Electrical engineering laboratory, 0-0-3-8	8
Thermodynamics, 3-6-0-0	9
Mechanics, 5-10-0-0	15
Military training	6
Total	53

CHEMICAL ENGINEERS.	
Mechanics, 5-10-0-0	15
Electrical engineering, 3-6-1-0	10
Chemistry, organic, 3-6-0-10	19
Electrical engineering laboratory, 0-0-0-3	3
Military training	6
Total	53

The work done by men who had been at the institute for three and one-half years, since the first term of the senior year had been given during the spring and summer of 1918 and were therefore taking the eighth term at the institute, was arranged to complete the regular institute course during the term which ended January 9, 1919, at which time a proposed commencement would take place. The work during the summer included the subjects of the regular course to such an extent that the number of hours per week required for students on the Students' Army Training Corps basis ran from 27½ to 47½ hours per week. This included study periods. The courses given were the theoretical subjects of the senior year of the institute curriculum.

The committee schedules were issued in many cases after the regular time of opening for the technical institutions, and from the middle of September to the 1st of October students were being inducted into the corps.

On October 1, 1918, the United States Army training detachments which were established at educational institutions by the Committee on Education and Special Training were merged with the Students' Army Training Corps, as this date was set for the formal mobilization of this corps. At this time, at more than 400 colleges and universities throughout the United States, over 150,000 young men became members of the Army or Navy of the United States.

On September 17, 1918, orders were issued to the mobilization officers at various recruiting stations permitting students subject to draft to enroll as members of the naval section of the Students' Army Training Corps at institutions at which naval units were established. At various institutions throughout the country a limited number of men were allowed to enter the naval units.

Following the signing of the armistice, orders were issued to demobilize the Students' Army Training Corps, and this began about the first of December, demobilization being completed about December 21.

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This experiment covered a period of 12 weeks and completed the first term of the Student's Army Training Corps. It was necessary for each school to keep records of the scholastic work of the students on the percentage basis of 100. The committee requested monthly records of grades to be sent to them for the purpose of furnishing necessary information regarding various members of the corps. The military records were kept by the personnel officer. The work of each term of 12 weeks was to have been followed by a furlough of one week, and from the records made by members of the corps their continuation was to have been determined.

The work of the Students' Army Training Corps was in general far from satisfactory to the college administrators, largely because the relations between the military commanders and the educational authorities were not fully adjusted. The demand for men to be used for military duty and for kitchen police prevented many students from properly pursuing their studies, and in many cases the time taken for drill and guard duty prevented students from obtaining proper educational training. The period covered by this experience, however, was the period of an entirely new experiment, and the unforeseen difficulties had not been overcome by the time the experiment was concluded. It was the belief of many that, had the Students' Army Training Corps been continued for a longer period, these difficulties could have been rectified and the training made successful.

From a study of the courses listed above, it will be evident that with proper administration the four courses in engineering would have given training sufficient to produce able engineers, considering that this training was planned for intensive study during a critical period of the life of the nation.

LATER DEVELOPMENTS IN ENGINEERING EDUCATION.

The period covered by the years 1919 and 1920 is marked by few changes in the curricula of the engineering schools; some of these changes have been in progress for five or six years, some have been brought about by new demands, and some by new laws Very few schools report changes due to war experiences or to the Mann report, mentioned in the Biennial Survey of Education, 1916–1918, U. S. Bureau of Education, Vol. I, page 100.

The war experiences of the schools of engineering are so recent, and in many cases were so unsatisfactory, that it is difficult to obtain any constructive suggestions from these experiences. Of the replies received from those in charge of engineering schools, only one states that the war experience gave suggestive matter. This suggestion was the value of supervised study. The author of this reply believes that great value can be derived and should be accomplished by supervised study. To the writer of this report the plan of supervised study was welcomed as a method of increasing the study time of the students, but when this was instituted it was found that with those unaccustomed to study in large rooms with a number of persons present the method produced poor results. The psychological effect of restricted activity and uriform study time of definite duration was bad. The results of this method were not good, and there was much complaint from the students.

The methods used for the Students' Army Training Corps were revolutionary in that old values were absolutely abandoned for the time being, and many thought that the engineering curricula might be changed at the conclusion of the war. This did not occur, for the unhappy experiences of the Students' Army Training Corps days made all anxious to return to prewar conditions. This experience was unfortunate in that it was of such short duration that there was nothing in the three months of operation to correct the evils which had developed, and, as said before, many believe that had the Students' Army Training Corps been continued for a year with war incentives for work, a different result could have been expected.

The experiment did prove the value of an incentive for work, an impelling motive, and in this post-war period courses for orientation of the young engineer have been

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introduced, and "motivation" is a new term, which indicates the influence of such courses on the work of the engineering student. The war experience has also shown to many that courses of study may be changed without great difficulty, and it may be with advantage.

The various replies that have been received regarding the effect of the Mann report have indicated in most cases that the report has had little influence. A few have used the reports as a basis for changes in the curriculum, and others have made changes which are recommended in the report, but the consideration of these antedated the report, and were due to the developments of educational methods or the demands of the times. Many of these changes have been advocated and discussed at the meetings of the Society for the Promotion of Engineering Education. In many institutions the report has received careful study by faculty and officers.

To help the Nation at the critical period of the war, many institutions graduated the classes in engineering at an early day by utilizing Saturdays for class work, and in this way men were graduated in February and May, 1918, in place of June, 1918.

In some institutions, before the establishment of or plans for the Students' Army Training Corps were made, instruction was given during the summer of 1918, and thus they were enabled to graduate the class of 1919 in December, 1918. The armistice of November, 1918, made any further speeding up of work unnecessary; and after the graduation in December, 1918, or January, 1919, and the demobilization of the Students' Army Training Corps, work was resumed on almost normal schedules. The changes brought about by the Students' Army Training Corps work of the first term made the studies in January of such a nature that the regular schedule could be resumed at the beginning of the second term in February, 1919.

The period 1918–1920 marks a new era of increased enrollment in the engineering schools. The enrollment of September, 1918, in the Students' Army Training Corps, was large. This was due to many causes. In the first place the Government agreed to send eligible young men to college and to pay their expenses, including tuition, board, room rent, and clothing, as well as to give them the pay of regular soldiers. Besides this, the Selective Draft Law made it impossible for one of draft age to get an education in any other manner, and many men wanted to serve their country in this way. It is possible, too, that some who were eligible took advantage of the Students' Army Training Corps to avoid active fighting service.

On the demobilization of the Students' Army Training Corps a number of men left, but after the demobilization of the Army many other men returned for the second term in the spring of 1919, so that the second term enrollment amounted to 75 per cent of the enrollment of the first term.

In the fall of 1919 the enrollment of most engineering schools was even larger than that during the Students' Army Training Corps period, and this large enrollment was continued or exceeded in the fall of 1920, and that of 1920 by the still larger enrollment of 1921.

The large enrollments during these years have been due to the return of many who had interrupted their studies early in the war to unite with arms of our own service or those of our allies; to the return of those who were drafted; to the fact that the war interrupted the education of many who would have entered the engineering schools during the period of the war, and finally to the fact that many students or parents had been placed in such a financial condition, because of the high wages paid to artisans, that certain young men were able to pay the cost of higher education. In addition, the value of college education was demonstrated by the success of the college trained men during the war in the service and the industries.

The showing made by men trained in engineering during this critical period indicated to many the value of such education, and it is believed that this large enrollment will be maintained unless business depression continues for a long time. The demand for men trained in engineering for executive positions in the industries also indicates that this enrollment will continue.

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There are several tendencies of this period which are indicated by a study of the college catalogues and of the replies to inquiries. These tendencies, although now evident at this time, have been gradually developing, and in some cases they have been evident for years.

There is some indication that more special courses are desired, such as compressed air engineering, industrial engineering, heating and ventilating engineering; but there is a strong current of feeling that we should develop men fundamentally and broadly and leave the specialties to be acquired after graduation. Thus at the State University of Iowa the course of the first three years in engineering is common to all engineers and only two-thirds of the work of the various branches of engineering in the senior year is different. Others report two years in common, and many report one year in common.

There is a tendency to introduce engineering courses of a general nature in the freshman year for the purpose of orientation, although this has been the avowed practice of many for years. A number of institutions have introduced these courses and in some cases the course takes the form of a series of lectures by heads of the various engineering departments given to all students, while in others special courses are given in each of the departments of engineering. These institutions feel the necessity of giving the student a motive for work by arousing interest in the activities of the engineer, the study of which must of necessity come after the preparatory years in fundamental subjects.

In many engineering schools the subjects of citizenship, economics, sociology, bookkeeping, shop management, business administration, finance, and law are being added to the curriculum by the exclusion of certain engineering subjects. The engineer is now playing more of a part in administration and the management of plants. For this reason these courses are required. The courses omitted are those of a special nature, which may therefore be properly taken up by the graduate in connection with his technical work. The sciences dealing with the fundamentals of human relationships are as necessary as the fundamentals of engineering in the world in which the engineer must work to-day.

In addition to adding these subjects in a greater or lesser degree, some institutions have offered courses in administrative engineering, as at Sheffield Scientific School of Yale University; in administrative science, as at the University of Kansas; and in an administrative option, differing in the last two years from a technical option, as at Union College in civil engineering; and others have offered courses in commercial mechanical engineering or commercial electrical engineering, as at the State College of Washington.

The courses in industrial engineering established at certain engineering schools are being continued, while at Columbia and at the University of New Hampshire industrial engineering has just been established. At some institutions special intensive summer courses in the industries are given to engineers who are engaged in industrial engineering.

Certain schools of engineering, such as that of the University of Pennsylvania, are giving special spring courses in highway engineering to train graduate engineers in road building and economics. The great wave of service by the engineer is entering our schools in their desire to render service to the graduate needing further training after entering practice.

The success obtained from certain problem courses during the intensive Army training period, and the belief of some educators even before the war, have united to cause the introduction of courses in engineering by which the teaching is done through problems. At Lafayette College freshmen during their first term are given problems connecting mathematics and engineering. At other institutions this kind of work is applied to the subjects of the later years, and as a result of five years of

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investigation the engineering school of Tufts College has made a departure from the usual curricula of engineering schools, the aim of which is:

(1) To present a survey or perspective of a chosen field of engineering previous to a detailed study of fundamentals. (2) To coordinate theory and practice by using projects of a distinctively engineering character involving theory. (3) To reduce the number of subjects studied at one time, while intensifying the work in these subjects. (4) To rate the student by observation on his character as well as by the quality and quantity of the prescribed task.

To accomplish these ends, there is given in the freshman year the so-called main introductory course in connection with mathematics, English, and drawing. The main course consists in the study of four projects for the civil engineers and four projects in common for the mechanical engineers and electrical engineers.

During the first year of this new method the projects for the civil engineers were:

First. The study of a wooden garage.
Second. The study of a steel garage.
Third. The study of a small highway bridge.
Fourth. The layout and survey of an underground tunnel.

The projects for the mechanical and electrical engineers were:

First. The measurement of power developed and delivered by a steam engine.
Second. The dismantling, reassembling, and operation of various types of automobiles.
Third. The distribution of potential along lighting circuits.
Fourth. The study of the operation of batteries.

The projects use three laboratory periods and three recitation periods a week for the whole freshman year, and in this time laboratory work, drawing, surveying, graphics, handbooks, sketching, elementary mechanics, kinematics, steam engineering, and electrical instruments were used as needed, and where possible the work was coordinated with textbook assignments.

This introductory course increased the interest shown by the student and made him more observant. It reacted on the student in helping him in the English work of the freshman year in giving him material on which he could write.

In the upper class the endeavor is to cut down the number of required subjects to five. This was done by combining certain related courses into one course. The outline of the course for each term in each year is given below:

FIRST YEAR.

	Hours per week.
Main introductory course	12
Mathematics	9
Graphics	7
English	6
Total	34

SECOND YEAR.

Department courses	12
Two supplemental courses	14
Mathematics and mechanics	6
Electives	4
Total	36

THIRD YEAR.

	Hours per week.
Departmental courses	18
Applied mechanics	6
Physics	6
Elective	6
Total	36

FOURTH YEAR.

Engineering economics and business law	6
Departmental courses and electives	30
Total	36

In the application of the problem method some institutions feel that their lack of success has been due to the lack of maturity of the students. There can be little doubt that the problem method may excite interest and aid in the later theoretical study, but it may also be said that previous theoretical study will lead to greater facility in the solution of problems.

In languages there is a tendency to extend the work in English and reduce or eliminate foreign languages. Training in public speaking and debate are required by some.

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The lack in English is felt for the same reason that we feel the lack of training in the subjects dealing with human relations. As the engineer has to deal with men to a greater degree, he must know how to transmit his thoughts in words as well as by drawings.

There is a slight indication that more physical exercise is to be demanded in our schools. This probably is an indirect result of war experience, when it was found that so many of our men were not physically fitted for effective service.

During the last 5 or 10 years there has been a tendency to divide the year so as to form quarterly periods, using the summer quarter for the removal of conditions and for the graduate or undergraduate work of public school teachers. This meant that the regular courses were given in three quarters. The reports from some institutions indicate that a return will be made to the customary two-semester plan, although at the Southern California Institute of Technology the two-semester work has been changed to three terms.

The design courses, which are an important part of some curricula, have been dropped from the curriculum of the University of Oklahoma.

One of the recent changes in engineering education has been the extension of the school of engineering at Princeton University in 1921 to include undergraduate courses in civil engineering, electrical engineering, mechanical engineering, chemical engineering, and mining engineering, as well as a graduate year for the first four of these courses.

The plan has been under consideration for a number of years, and the desire has been to utilize the facilities of the university for the general education of engineers with broad vision and to give the necessary technical work to prepare the graduate for the profession. The aim has been to limit the technical work to the fundamentals of engineering, covering sufficient preparation to make the graduate of the four-year course able to enter engineering as an assistant, leaving to a graduate year the many special courses now included in the four-year engineering courses.

The preliminary schedule of studies for these courses shows the following average figures:

	Per cent.
Science	23
Mathematics	11
English and foreign language	15
Sociology, economics, history, and electives	18
Engineering	33
Total	100

The graduate year leading to an engineering degree is to consist of engineering, economics, and research. The four-year course will lead to a bachelor's degree.

The cooperative system of engineering education used for a number of years at various institutions has been introduced into the electrical engineering department of the Massachusetts Institute of Technology. In this newest cooperative plan of study the aim has been to give all practical training in one manufacturing institution, the General Electric Co., at Lynn, Mass.

The first two years of the course are similar to the first two years of the regular four-year course, and then during the summer of the second year the entire cooperative class is sent to the General Electric Co., at Lynn, Mass., to begin their practical training. At the end of this summer period of 13 weeks the class is divided into halves, and one half continues at the works for 13 weeks while the other half returns to the institute for 11 weeks of instruction to be followed by a 2 weeks' vacation to complete the 13 weeks' period. The halves now change places, one section returning to the institute for its 11 weeks of instruction and 2 weeks of vacation and the other going to the shops for 13 weeks of practical work. This is continued until the expira-

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tion of two and one-half years, the student having had work in the factory for 18 months and 5 terms of 11 weeks' actual instruction at the institute. The whole class spends the last period at the institute. Interpreting this into standard college years of about 33 weeks, the student has completed four college years at the institute and one and one-half actual years in practical work and some theory at the shop. At the end of this period the successful student receives the degree of B. S. as of the previous year and the degree of M. S.

The work in the shop is so arranged that the student works 48 hours per week in shop or office, 4 hours in lectures or recitations, and 6 hours in study and preparation. Of the 4 hours mentioned, 1 hour is devoted to a lecture by one of the shop superintendents and 3 hours are given to recitations in electricity and English. This requires 58 hours per week and gives the student three week-day evenings, Saturday afternoon, and all of Sunday as free time, and permits him to do all required work by 9.30 on the other three evenings.

The period of 11 weeks at the institute is such that the institute courses can be given without any disarrangement of other work, as the periods correspond with institute terms. The theoretic studies include advanced subjects, and in the last year are included research and creative design at the institute and experience in the research laboratories and in the engineering and manufacturing offices at the factory.

The shopwork is under the direction of representatives of the cooperating company and the institute, and the recitations in theoretical work during the shop period are held by members of the institute faculty.

The principal differences between this cooperative course and those previously given are stated by Prof. W. H. Timbie as follows:

First. Length of periods for shop and college. This has been thought advisable to permit the student to become familiar with men, methods, materials, and spirit of the department in which the period is spent, although in some cases the student may be placed in several departments during one period. The length of period also reduces the number of changes to 12.

Second. The recognition by the cooperating company that for three years the student is in its plant for the purpose of being educated and trained as a high-grade electrical engineer. There is no attempt to make student labor of value to the company per se, but the work is so arranged that the student may learn manufacturing methods and the best relations of labor, machinery, and materials for proper production. Shifts are made as soon as knowledge of the detail of a department is attained by a student.

Third. A continuity of studies of theoretical and humanistic subjects. This work is carried on at the institute and at Lynn.

Fourth. Required collateral reading. This is done at the Thompson Club, at which the students live together while at Lynn. Here books from the institute library and Lynn Public Library are found. The books permit reading outside the prescribed courses.

Fifth. Intense spirit of loyalty inculcated in members of this course to one another, to the institute, and to the cooperating company.

Sixth. The continuation of the work for three years in one company. Of course the magnitude of the plant of the General Electrical Co. at Lynn makes this cooperative course of great value in that the student will be brought in contact with most manufacturing and business methods in connection with the production of electri[illegible] apparatus. The practical training deemed necessary can be obtained with one [illegible] pany.

Seventh. The unusual amount of theoretical work, so that the master's degree be given at the end of five years.

This cooperative work, as that conducted by Cincinnati, Pittsburgh, Akron, Massachusetts, is applied to a very limited degree in other institutions.

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Yale requires a limited amount of summer work, and electrical engineers at Rensselaer may substitute eight weeks of work in an approved plant for the second shop period of four weeks at the institute. Johns Hopkins requires six months of industrial work. At Antioch College summer work as well as term work in the industries is encouraged for the purpose of self-support as well as to train the student in practical details of the profession for which he is preparing. The University of Maine is planning to require work in industrial plants during two summers.

One other trend remains to be mentioned. In a number of institutions, civics, citizenship, or United States history has been added to the engineering curriculum. The war probably demonstrated the advisability of such training; and, moreover, there is a desire in all educational institutions to prepare men to take an interest and an active part in civic affairs as well as to fit them for specific work.

The Smith-Hughes Act, approved by the President February 22, 1917, appropriates funds amounting in 1926 to a yearly sum of $6,000,000 for the purpose of cooperating with the States in providing instruction in agricultural, trade, home economics, and industrial subjects, and in preparing teachers of vocational branches of study on condition that the States appropriate equal sums. The act divides one half of the fund among the States in proportion to the ratio of their rural inhabitants to the total rural inhabitants of the United States for the salaries of agricultural teachers, supervisors, or directors, and the other half in proportion to the ratio of their urban inhabitants to those of the United States for the salaries of teachers, supervisors, and directors of trade, home economics, and industrial subjects. Another appropriation amounting to $1,000,000 annually is divided in proportion to the total population of the States for the purpose of preparing teachers.

In carrying out this act a number of the State schools of engineering are offering courses of vocational training. Some of these courses are given in the engineering schools; others are given in the department of home economics, agriculture, or education. The work has been so recent that many institutions have not arranged these courses completely. The following quotations will give some idea of the present condition of the courses in engineering organized to meet the requirements of the Smith-Hughes Act:

WEST VIRGINIA UNIVERSITY, MORGANTOWN, W. VA.

Undergraduate curriculum in industrial education, leading to the degree of bachelor of science.—The object of this course is to prepare young men and women to teach vocational subjects and to supervise vocational work in connection with the administration of the Smith-Hughes Act. This is a new course, and the exact requirements have not been definitely fixed. A total of 128 semester hours will be required for graduation, which must include 10 hours in English, 10 hours in mathematics, a thorough knowledge of one or more trades, 4 hours in mechanical drawing, and 10 hours of vocational industrial education.

UNIVERSITY OF WISCONSIN, MADISON, WIS.

Smith-Hughes courses for those who desire to teach trades and industry or the related subjects as prescribed by State and Federal laws.—The department of manual arts will administer courses in accordance with State and National prescription in the training of teachers of trade and industry. At different times in the past the department has been instrumental in organizing special groups of mechanics in order to assist them, by means of short courses, to prepare for teaching in Wisconsin continuation schools or other vocational or trade schools. Under the new organization the department will, if possible, organize similar classes to be given instruction in accordance with the provisions of the Smith-Hughes law and those for the Wisconsin State Board of Vocational Education.

For several years the University of Wisconsin, through the agency of the department of manual arts acting for and with the extension division of the university, has conducted evening courses of study in Milwaukee, Wis., for tradesmen preparing to teach industrial subjects. The department is prepared to continue this work, to modify it

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to conform to Smith-Hughes requirements, and to assist in the organization and conduct of similar instructional work in other Wisconsin centers. In doing this it will not seek to set up an independent organization, but will endeavor to cooperate in any way possible with local agencies, the Wisconsin State Board of Vocational Education, and the Federal Board of Vocational Education.

A registrant for courses given under the heading of "Vocational courses for teachers of trade and industry" shall be admitted as a special student. Upon the completion of any unit of work or prescribed special course, he shall receive a certificate specifying his accomplishment.

UNIVERSITY OF TEXAS, COLLEGE STATION, TEX.

Course in industrial education.—The course in industrial education has for its main purpose the preparation of teachers of related subjects as prescribed for industrial education under the Smith-Hughes Act. Graduates of this course will be prepared not only to teach related subjects but to teach the regular shopwork ordinarily given in the high schools of the State, to teach shopwork under the Smith-Hughes Act in schools of cities having a population of less than 25,000, and to direct or supervise industrial education in large city school systems. The course requires contact with a wide range of trades through its shopwork and a liberal education in science, mathematics, history, English, etc. Thorough preparation in the art of teaching and supervising is afforded. The wide range of electives permits the student to specialize in some trade, or to do more extensive work in a wide field.

The State plans for requirements of teachers of related subjects in classes using Federal funds under the provisions of the Smith-Hughes Act which specify that the teacher must have had at least 880 hours of experience in at least two trades. This is to insure adequate contact with shops operated on a commercial basis. Students in this course are expected to get this experience through summer work following the sophomore year and the junior year. The department of vocational teaching will assist in arranging for this work.

BUSINESS ADMINISTRATION.

A course in business engineering has been offered at the Iowa State College. In this course subjects of various courses in the engineering school have been united with administrative courses for application to business. The college makes the following statement:

Large corporations, contracting firms, municipalities, and all employers of technically trained college men are showing an increasing tendency to transfer such men as have made successes in strictly engineering lines into positions of magnitude and trust requiring knowledge of economic relations and business principles. It is true that the engineering graduate has the ambition to own and manage a business. Many men with the training secured in our engineering schools, combined with the principles of economics and rules of business which they have had to acquire slowly, are meeting with the greatest success in positions which rquire the highest type of business training and qualifications and a minimum of engineering experience.

From such employers of technically trained men and from engineering graduates now in business for themselves has arisen a demand that the engineering schools offer studies in the fundamental principles of business, supplemented with advanced work along lines closely allied with engineering industries. The engineering schools of the country have felt this demand, and many are meeting it in various ways. The problem might be solved most easily by increasing our engineering courses from four to five years, by requiring certain studies related to business during the last two years, and by giving opportunity for free electives. Under present conditions it seems desirable that the studies relating to the fundamentals of business be offered in the regular four-year course.

The intimate relation which must exist between engineering and business is not new idea at this college. The engineering courses have been requiring or offering electives many studies bearing directly or indirectly on business relations. number of such studies and the quality of the work offered are continually being creased and improved. It is believed that there should be no weakening of the es tially technical and engineering side of the four-year courses. It is probable that marked success with which many men with engineering training are filling busi positions is due to personality and opportunity combined with habits of logical a independent thinking acquired in large part while completing an engin course and supplemented by later experience.

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The subjects of this course include the following:

Architectural engineering: Elements of contracting.

Civil engineering: Estimating and cost keeping, engineering reports, professional practice, railway operation and administration.

Economic science: Money and banking, public finance, American labor, distribution of wealth, economics for engineers, accounting, business law, rural sociology.

Engineering: Specifications and contracts, history of engineering.

English: Main elements of composition, exposition, narration and description, argumentation.

History: Industrial history of the United States; history of labor in the United States; financial history of the United States; history of foreign relations of the United States; American Government, municipal government.

Agricultural journalism: Beginning technical journalism; feature writing for technical journals.

Mathematics: Statistical method of interpreting experimental data.

Mechanical engineering: Power plant engineering, industrial engineering, industrial organization, scientific management.

Mining engineering: Mining engineering, mine administration, and mining law.

Public speaking: Extempore speech, debating, advanced public speaking.

JUNIOR COLLEGE.

During the last few years the development of the junior college in connection with the high schools of a number of cities, the division of the work at the university into an upper and lower division and also to give engineering in two years to graduates of colleges of arts and sciences, has caused some engineering schools to rearrange their curricula so that with a little extra work men with preparation can graduate with two years of engineering work. The junior college and its many advantages have been discussed in the Report of the United States Commissioner of Education for the year 1920. The division of university work into upper and lower divisions has been practiced for many years as at Chicago, it being recognized by others that the work of the first two years of most colleges and schools is a continuation of high-school work, and as such it is distinct from the work of the two latter years. The recognition of this has made possible the acceptance of work done in postgraduate high-school courses or junior colleges.

RÉSUMÉ.

To give in a brief form the progress of engineering education during 1918–1921, it may be stated that during this period there has been manifest a greater desire to stress fundamental studies to the exclusion or removal of certain applied studies, an elimination of modern language by some and an increase of English, an increase in the study of economics, history, civics, and business methods, an inclusion in the early years of motivating courses, a wider use of the problem method of teaching, and finally a desire to decrease the number of courses by the grouping together of short courses.

DATA FROM REPLIES.

The following digest of replies gives the data for the foregoing report.

Antioch College, Yellow Springs, Ohio.—The reorganization program for the college includes cooperative work in all branches of study. The trustees of Antioch College have determined to reorganize along the following lines:

1. Student self-support by a division of time between college study and remunerative work, the college program being arranged accordingly.

2. A combination of practical experience with academic study, preferably in the calling for which the student is preparing himself.

3. Allowance of credit for actual accomplishment and not for "clock hours" spent in any given subject. (It is estimated that the average student will require 6 years to complete a course of study requiring full time for 4 years.)

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4. The college will offer liberal arts courses and a limited number of technical courses. In the belief that the best results can be secured by a comparatively small faculty of high-grade men and women, the number of regular liberal arts courses will be limited to about 80, which is less than half the number usually offered in small colleges.

5. Except for students who show marked ability in any department, liberal arts courses will deal only with the fundamentals of their subjects. For students who do show such ability, autonomous courses will be provided. That is, for advanced work, well-considered courses will be offered, with library and laboratory facilities, and with occasional access to the heads of departments or other competent authorities for advice. Thereupon the student will carry the advanced work in the manner of a seminar.

6. There must be coordination between different courses, so that the college will be a synthetic unit and not an aggregation of unrelated departments each bidding for the students' time and interest.

7. A limited number of technical courses will be offered. A technical course must include the fundamentals of a liberal arts education, as it is the aim to make citizens as well as technicians. These courses will aim to develop general competency rather than highly specialized technique, and to prepare men and women for callings for which adequate preparation is not now being given in colleges and universities. They will aim to make men directors of industry rather than employees working under detailed directions.

8. The college will aim to eliminate the traditional cleavage between cultural standards and practical standards and to make practical life for its students a medium of expression for such cultural standards and ideals.

9. Physical fitness is a primary condition to happiness and success. Students will be required to care for their physical condition in order to remain in the institution.

10. The final measure of accomplishment will be the success attained in turning out students whose preparation has laid the basis for productive service and whose primary aim is service to their communities and to their times. No paper program will accomplish this result, but only the spirit with which the college may be imbued. The chief hope of the trustees is to secure a faculty and a student body that will make this result possible.

California Institute of Technology, Pasadena, Calif.—The institute has changed from a two-term to a three-term year. Modern language has been eliminated, being replaced by English, history, current topics, and geology. A new course, physics and engineering, has been introduced.

Carnegie Institute of Technology, Pittsburgh, Pa.—No important changes. Discussing return to two semesters from four quarters.

Case School of Applied Science, Cleveland, Ohio.—The present day requests for engineers indicate the importance of students using summers for work in industrial plants so as to better understand labor and industrial problems. This work is not required at present, but the requirement is being considered. The experience of the school indicates that preparatory work is not being done as well as it was before the war. A tendency to student organization is more manifest than formerly.

College of the City of New York, New York, N. Y.—The school of technology was recently organized. Although contemplated for some time, the war accelerated the inauguration of this new school. The chemical engineering course is such that B. S. is given at the end of four years and Ch. E. at the end of the fifth year.

The freshman year contains public speaking, analytic geometry, calculus, English, a foreign language, chemistry, descriptive geometry, mechanical drawing, American Government, citizenship, physical training, and military training.

For sophomore year: Prose and poetry, declamation, English, history, physics, qualitative analysis, geology, evolution of industry, causes and cures of diseases, defense of health, and military training.

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For junior year: Debate, physical laboratory, organic chemistry, philosophy, machine design, qualitative analysis, electrochemistry.

For senior and post senior years the subjects are technical with the exception of courses in debate, business organization, and commerce.

The courses in mechanical engineering, electrical engineering, and civil engineering are the same as the above for the first two years and differ in the technical subjects of the last years. There are small differences in the first two years, but these differences are due to sequence. In all four courses there is training given in history, philosophy, civics, hygiene, and business. Economics is included in certain courses.

The announcement of the school contains the following quotations:

These technical courses as established cover a period of five years. During the first two years the work required consists almost entirely of necessary prescribed collegiate science subjects, the better to prepare and develop the mind of the young student for what is to follow. The third and fourth year subjects taken up are to a very great extent strictly in engineering, but so arranged that the student is upon completion of the fourth year eligible for the degree of bachelor of science.

Then, after an additional or fifth year of purely advanced technical engineering subjects, he receives the degree of chemical, civil, electrical, or mechanical engineer.

In each instance the ground covered by the course has been carefully studied and thought out by a corps of well-equipped technical and practical instructors, each one thoroughly conversant with his particular branch. The purpose is to make the course fundamental rather than intensive along any particular line.

The collegiate work is largely cultural in character, in order to secure in the education of the engineer a much broader range than if confined only to the engineering field.

Upon completion of the entire course the graduate is thereby better equipped to go into the business world and meet the problems of life; he is better fitted to take his place as an executive with big financial, operating, and construction interests.

Owing to the great development in the industrial world and the rapid advancement of this country as a financial and commercial power, the field of the engineer is much larger than heretofore. There has always been a dearth of men fitted to fill the higher positions; there is at present and will be for a generation to come a considerable demand for trained men in all grades. There is hardly a line of endeavor which does not require the advice, cooperation, and assistance of the engineer.

Many of the engineering subjects are given in the evening session for the benefit of those who are employed during the day. These evening courses are identical with the day work in so far as the scope and thoroughness are concerned. They are meant to meet the needs of those who are engaged during the day but wish to secure a technical education and better their condition.

Columbia University, New York, N. Y.—In 1919–20 numerous readjustments took place to accomplish four objects:

1. A better selection of subjects to study.

2. The avoidance of nearly similar courses given similarly for different groups of students.

3. Reduction in number of different subjects of study pursued at the same time.

4. A reasonable total weekly requirement of class, laboratory, and study hours.

The university offers a new course in industrial engineering. This is largely a course in mechanical engineering until at the later end of the course the subjects of organization, management, and business methods are given.

The courses in engineering at Columbia require three years of college work for entrance, and three years are required for completion of the courses.

Cornell University, Ithaca, N. Y.—The experiences of the war have been to accent the practical side of vocational training and to reduce to a minimum the training necessary to produce men of specific types. Although a number of special courses in military engineering were requested, the engineering school has only introduced courses in ordnance engineering and signal engineering. The general tendency has been to give broad training to the engineers rather than more special engineering work relating to the particular branch giving its name to the department.

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Economics, English, and other general subjects are being added to the engineering courses. All engineering instruction has been combined into one college which will now be known as the college of engineering and will consist of three divisions offering the degrees of civil engineer, mechanical engineer, and electrical engineer. The curriculum will be the same for all students during the freshman year. The civil engineering students will have a slightly different course during the sophomore year from those in the two other departments. At the end of the second year all three departments will be under different schedules.

University of Dayton, Dayton, Ohio.—The curriculum provides for ethics, psychology, and logic to succeed or to be taken conjointly with economics.

University of Florida, Gainesville, Fla.—All courses are the same for one year and for mechanical engineers and electrical engineers for two years. Selects best men for admission, as capacity is limited. Advocates higher standards rather than expansion.

State University of Iowa, Iowa City, Iowa.—Civil, electrical, and mechanical engineers have three years in common, and in senior year one-third of their work is common. The chemical engineering course has been extended to five years. The Students' Army Training Corps made clear the value of supervised study.

Johns Hopkins University, Baltimore, Md.—The following changes have been made:

1. Transference of applied mechanics from third year to second year.

2. Introduction of course in general engineering for freshmen. Course is given by various faculties in turn.

3. The increase of the requirement of three months in industrial work to six months.

University of Kansas, Lawrence, Kans.—Changes made during the years 1918–1920 have been as follows: Establishment of a complete schedule in engineering and administrative science; a course in elementary economics for all students; elimination of shopwork for civil engineers, and the introduction of elementary geology into the freshman year; the permission of substitution of other work for modern languages; the omission of modern languages for students of the Reserve Officers Training Corps; the introduction of an option for civil engineers and the introduction of a four-year course in architecture.

The university is considering the provision for freshman students who enter with one year of training in algebra and geometry and a further reduction of the modern-language requirement.

Lafayette College, Easton, Pa.—The college has made a complete revision of the curricula in civil, electrical, mechanical, and chemical engineering, for the following purposes:

1. To give the freshmen some real engineering problems in their first term, to establish some connection in their minds between their mathematics and actual engineering. These courses were taught by the heads of the engineering departments.

2. To reduce the number of credit hours per week, each credit representing three hours of the student's time, to 17 or 16 if possible.

3. To provide electives for engineering students in the so-called cultural subjects. The greatest number of such credits was required in the civil engineering course, i. e., 18 credits.

4. To reduce the number of subjects studied in any given term to 5 or 6, or less if possible.

5. To introduce the laboratory method of instruction, i. e., problem work in class, so that assistance and corrections may be made immediately by an instructor. These laboratory periods were made three hours in length and introduced into courses in mathematics, mechanics, and materials. These are distinct from experimental laboratory periods.

6. To relieve the pressure on the curriculum by eliminating courses on the applications of engineering and putting more time on fundamentals. For example, such

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courses as telephone engineering, aeronautics, advanced structural design, etc., were either omitted or made elective by groups.

These changes, which have been in operation for two years, are now being revised in the light of this experience. Certain courses will be shortened, while others will be extended. There is a tendency to combine a number of shorter courses into one larger course. No modern language is required for engineering students with the exception of those taking chemical engineering.

The electives available for engineering students are American history, government, sociology, labor problems, ethics, applied psychology, and similar subjects.

Lehigh University, Bethlehem, Pa.—Scholastic changes of minor character such as might normally be made have been made during the period. These have not been caused by experience during the war.

In February, 1919, a unit of the Reserve Army Training Corps was established, with voluntary enrollment. The work in military science and tactics was made obligatory on all students entering the university.

Leland Stanford Junior University, Stanford University, Calif.—The mechanical engineering department gives, during the four years of undergraduate curriculum, a course which is intended to represent common training for five years of work in both mechanical and electrical engineering. Students at the end of four years receive the degree of A. B. in mechanical engineering, following which, after a year of further work along either mechanical or electrical engineering lines, they receive the degree of engineer in mechanical or electrical engineering.

Changes during 1918–1920 have been due to the fact that the first two years of undergraduate work at Stanford constituted a so-called lower division, and it has been necessary to readjust certain courses to care for this type of organization. The rearrangement has the effect of providing a more regular and definite manner for certain general courses, including modern languages, history, literature, and biological science. The university work is arranged so that after four years the student receives the degree of A. B. and the fifth year leads to the degree of engineer.

Courses are given in civil engineering, mining engineering, mechanical engineering, and chemical engineering. Electrical engineering is given as graduate work.

University of Maine, Orono, Me.—The faculty is considering requiring work in industrial plants during two summer vacations.

Michigan Agricultural College, Lansing, Mich.—New courses introduced with common freshman year for all, 20 per cent differentiation in sophomore year, and slightly more in junior and senior years; 60 per cent of work of all four courses is the same. Former courses were common for two years, with 72 per cent of the entire work of the four courses the same. An optional group of economics, English, French, and Spanish for three hours for senior year is now part of the four courses.

New Hampshire College, Durham, N. H.—The college gave courses in engineering and construction. The courses in mechanical and electrical construction have been abolished, and an industrial course given, so that the engineering division offers courses in mechanical, electrical, and chemical engineering, architectural construction, and a four-year industrial course. This latter course requires one year of mathematics and a wide range of electives during the last two years, enabling a student to fit himself to enter the industrial or manufacturing field, to become a sales engineer, or to prepare himself to teach under the Smith-Hughes Act.

New Mexico State School of Mines, Socorro, N. Mex.—Desire to eliminate some theoretical work and to substitute practical subjects therefor.

Norwich University, Northfield, Vt.—The amount of modern languages has been decreased from two years to one year, while the amount of English has been increased from one year to two years. The work in physical laboratory has been doubled, and the time devoted to theoretical mechanics has been decreased. A course in elements of

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mechanism has been added, as well as a short course in business organization and finance.

In the senior year a course has been added in engineering abstracts.

University of Oklahoma, Norman, Okla.—A course has been introduced in second-term freshman year in applied engineering. Economics has been extended to include elementary accounting, cost accounting, business organization, management, and business law. Experience during the war has led to elimination of design work for undergraduates.

Pennsylvania College, Gettysburg, Pa.—Changes of a minor nature have been made. War experiences were not long enough to suggest any changes. The problem method as used at Camp Humphreys has been applied with only moderate success, owing to the younger age of the students at the college compared with those in the Army. There was a lack of effort on the part of most of the students. To obtain moderate success a large number of instructors would be necessary.

Rensselaer Polytechnic Institute, Troy, N. Y.—Extension of English to a course in second term senior year, including report writing, correspondence, and technical papers; minor readjustments of courses to care for larger enrollment with present laboratory equipment. Changes have made the load upon laboratories more uniform, permitting the same effective work to be done with a larger number of students.

Rhode Island State College, Kingston, R. I.—Changes of minor importance have been made, resulting from an effort to produce harmony in various phases of the work of the institution. Certain modern language has been omitted from the sophomore year for additional work in chemistry by the chemical engineers.

Certain condensation of courses in electrical engineering have been made to introduce mechanisms and making the mechanical and electrical engineering courses the same to the beginning of the junior year.

Rutgers College, New Brunswick, N. J.—No particular changes have been made in the course of instruction. Certain changes will probably be made on the appointment of a new dean.

University of Santa Clara, Santa Clara, Calif.—A simplification of courses as much as possible, avoiding all specialization in a four-year course, emphasizing English, and more thorough grounding in fundamentals.

Sheffield Scientific School of Yale University, New Haven, Conn.—The courses in Sheffield scientific school of Yale University have been changed to four-year courses, with the degree of B. S., in place of the three-year course leading to the degree of Ph. B. The various engineering courses have been made to include general subject of history and English of about 13 per cent; science subjects of chemistry, physics and mathematics of 31 per cent; engineering, including drawing, laboratory work, as well as theory, 46 per cent; administrative subjects, including economics, accounting, and management, 8 per cent; electives in engineering and administrative work, 2 per cent. Although the figures above are for the mechanical engineering course, the civil and electrical engineering courses correspond with this quite closely. The school has established a course in administrative engineering, with 13 per cent of the work in general subjects, 24 per cent in science, 28 per cent in engineering, 21 per cent in administration work, and 14 per cent in electives.

South Dakota State School of Mines, Rapid City, S. Dak.—The school has been enlarged to graduate civil engineers and electrical engineers, in addition to those courses which have been given for years in mining engineering and metallurgical engineering. The first engineering degrees are given at the end of a four-year course, and advanced degrees are given not earlier than two years after graduation in practice or after one year of graduate study. Some of the courses have been rearranged to give courses in business management.

University of South Dakota, Vermilion, S. Dak.—Course in engineering technology for all freshmen. The work is given by C. E. department for first term, M. E. depart-

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ment second term, and E. E. department third term. Three terms are to be changed to two semesters.

Stevens Institute of Technology, Hoboken, N. J.—No changes to report.

Union College, Schenectady, N. Y.—The course in civil engineering has been revised by giving two options, one known as the technical option, the other as the administrative option. These options are the same for the first two years, which include, with the scientific and engineering subjects, foreign language, English, American history, and public speaking. In the junior and senior years the administrative option contains the subjects of psychology and European history in place of reinforced concrete construction. Both options contain business administration, including economics, accounting, business law, finance, banking, and contracts and specifications.

The administrative option contains important subjects in civil, mechanical, and electrical engineering, and has an unusually large percentage of business administration and cultural subjects; 26 per cent of the course is devoted to science, 39 per cent to engineering, 10 per cent to business administration, and 25 per cent to cultural subjects.

Washington University, St. Louis, Mo.—A readjustment has been made in all curricula.

State College of Washington, Pullman, Wash.—Changes have been made to include course in commerce and also to give distinct courses in management engineering, commercial mechanical engineering, and commercial electrical engineering. The courses in civil engineering, mechanical engineering, and electrical engineering have been continued; and in these, special courses in engineering economics have been substituted for special courses in the various curricula. The new courses have been introduced in response to the general trend of public opinion.

Worcester Polytechnic Institute, Worcester, Mass.—Nothing to report. The institute gives great importance to industrial management.

DATA FROM CATALOGUES.

In addition to the institutions sending letters, certain institutions sent catalogues. From the catalogues received in response to the communication from the Commissioner of Education the following has been obtained:

University of Akron, Akron, Ohio.—Five-year cooperative course, patterned after the Cincinnati plan, organized in 1914. Changes made at end of periods of two weeks. Year is composed of 11 months. Holidays of one week at Christmas, one week at Easter, and two weeks at end of summer. Degrees of C. E., M. E., E. E., and B. S. in Manufacturing Production. English and modern languages begin in the third year. Modern languages are continued for three years and English for two years. Economics is given for one year.

Alabama Polytechnic Institute, Auburn, Ala.—Common freshman year. English, three years, with English or economics for fourth year; no modern language; history, two years.

University of Alabama, University, Ala.—English, one year; no modern language; economics in one year.

University of Arizona, Tucson, Ariz.—Two years of English; one year modern language.

University of Arkansas, Fayetteville, Ark.—Two years the same for all engineers. English, one year; economics, one-third year.

Brooklyn Polytechnic Institute, Brooklyn, N. Y.—English, two years; modern language, two years; history, one year; economics, one-half to one and one-half years. Five years required for chemical engineers.

Brown University, Providence, R. I.—One course only in engineering. English, two years; economics, one year; engineering electives and approved electives.

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University of California, Berkeley, Calif.—No English or foreign language required if preparation is sufficient. Electives.

Catholic University of America, Washington, D. C.—English, two years; modern language, philosophy, and economics, each one year.

University of Cincinnati, Cincinnati, Ohio.—Four-year theoretical courses and five-year cooperative courses, with alternation between shop and university every two weeks. The latter course has years of 11 months. The first two years of all courses are about the same. English every term. Modern language required for two years in chemical engineering and one year for others. Certain courses require economics, management, and history.

Clarkson School of Technology, Potsdam, N. Y.—Three terms to one year. Five terms common to all courses. English, one year; economics, one year; modern language, one year.

University of Colorado, Boulder, Colo.—English one and one-third years; no modern language.

Colorado Agricultural College, Fort Collins, Colo.—English, one year; no modern language.

Dartmouth College, Hanover, N. H.—Two-year course in Thayer School of Civil Engineering after three years of college work. Suggested preparation: One year each in sociology, political science, psychology, civics, and one and one-half years in English and modern language, and two years in economics.

Des Moines College, Des Moines, Iowa.—English, public speaking, each one year. Electives from modern languages, English, commercial law, bookkeeping, business efficiency, accounting, and social sciences.

University of Florida, Gainesville, Fla.—One year in common. English, two years; economics, one-half year; law, one-half year; sociology, one-half year.

George Washington University, Washington, D. C.—One year in common for C. E., M. E., E. E. English one year and modern language one year.

University of Georgia, Athens, Ga.—History and English, one year; modern language, two years.

Georgia School of Technology, Atlanta, Ga.—One year common to all. English, two and one-half years; modern language, two years; economics, one-half year.

Harvard University, Cambridge, Mass.—English one year, or may be credited from preparatory work. Two modern languages which may be offered for admission. Accounting and business administration one year. An elective is allowed in each of the first three years.

Howard University, Washington, D. C.—English, one year: modern language, two-thirds year; law and economics, one year.

University of Idaho, Moscow, Idaho.—One year common; English, two years; modern language one year for chemical engineers, contracts and specification for other engineers.

University of Illinois, Urbana, Ill.—One year English, one year modern language, three to four terms of nontechnical electives.

Iowa State College, Ames, Iowa.—English, one and two-thirds years, no modern language; one quarter of specifications and contracts, one quarter of history of engineering, one quarter of engineering economics, one quarter of accounting. A course in business engineering is made up of subjects from the various courses at the college for application in business.

Kansas State Agricultural College, Manhattan, Kans.—English, two years; economics, one year; business law, one semester; history, one semester; no modern language.

Lehigh University, Bethlehem, Pa.—English, one and one-half years; modern language, one or two years; economics, accounting, law, finance, contracts, each one-half year.

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Lowell Textile School, Lowell, Mass.—English, one year; modern language, two years; economics, one year; business administration, one year.

University of Louisiana, Baton Rouge, La.—English, two years. No modern language.

University of Maryland, College Park, Md.—English, three years; modern language, two years; history, one year; economics and law, one year.

University of Michigan, Ann Arbor, Mich.—English, one year; modern language and cultural subject, three years; law, one term, options two years.

Michigan College of Mines, Houghton, Mich.—English, one and one-half years.

University of Minnesota, Minneapolis, Minn.—One year common. English, one year; electives in economics, government, finance, law, accounting.

University of Missouri, Columbia, Mo.—One year common. Citizenship, one year; economics, one term; English, one term; no modern language.

University of Montana, Bozeman, Mont.—English, two years; economics, one year; specifications and contracts, one-third year. No modern language.

University of Nebraska, Lincoln, Nebr.—One year common. English, one year; modern language, one year for civil engineers. A six-year combined academic-engineering course is offered.

University of Nevada, Reno, Nev.—English, one year; four terms of electives. No language.

New Mexico School of Mines, Socorro, N. Mex.—Two years in common. English, two years; modern language, two years.

New York University, New York, N. Y.—English, two years; modern language, two years; economics and industrial history, one year. A course is offered in business and engineering.

North Carolina State College, West Raleigh, N. C.—One year in common. English, three years, one year modern language. English, economics, industrial engineering, or modern language, one year.

University of North Carolina, Chapel Hill, N. C.—English, one year; modern language, two-thirds year; law, one-third year.

North Dakota Agricultural College, Fargo, N. Dak.—English, one and one-third years; history, one-third year; social science, one-third year.

University of North Dakota, University, N. Dak.—One year in common. English, one and one-half years; modern language, an elective. Economics, one term for certain courses.

Northeastern College, Boston, Mass.—English, one year; no modern language.

Norwich University, Northfield, Vt.—English, two years; modern language, one year; law, one year; economics, one year.

New Mexico College of Agriculture and Mechanic Arts, State College, N. Mex.—English, one and two-third years; modern language, one year; economics, sociology, and business law, one year.

Ohio State University, Columbus, Ohio.—One year in common. Modern language one year; English, one year.

Ohio Northern University, Ada, Ohio.—English, option; languages, option.

Oklahoma Agricultural and Mechanical College, Stillwater, Okla.—One year common. English, one and one-half years; modern language, one year for chemical engineers, electives equivalent to four years: economics, one and one-half years.

Oregon Agricultural College, Corvallis, Oreg.—English, one year; public speaking, one-third year; economics, one year.

Pennsylvania State College, State College, Pa.—One year common. English, two years; modern language, two years; economics, one year; law, one-half year; history, one-half year; political science, one-half year.

University of Pennsylvania, Philadelphia, Pa.—English, two years; modern language two years; law, one year; economics, one-half year for mechanical engineers and electrical engineers.

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University of Pittsburgh, Pittsburgh, Pa.—Work in four terms of three months each in some engineering industry in the Pittsburgh district is required of every student before graduation. This work is supervised. One year in common. English, one and one-half years; modern language, two years; economics, one and one-half years; philosophy and psychology, one year.

Polytechnic Institute of Brooklyn, Brooklyn, N. Y.—English, two years; modern language, two years; history, one year; economics, one-half to one and one-half years. Five years required for chemical engineers.

Princeton University, Princeton, N. J.—English, two years; modern language, two years; economics, two years; business methods, one term; electives two years.

Purdue University, Lafayette, Ind.—English, one and one-half or two and one-half years; modern language, two or three years; economics, one-half year; history, one-half year; law, one-half year.

Rose Polytechnic Institute, Terre Haute, Ind.—English, one and one-half years; modern language, two years; economics, one-half year.

University of South Carolina, Columbia, S. C.—English, one year; modern language, one year.

University of Southern California, Los Angeles, Calif.—English, one year; law, one-half year; electives, three years.

University of Tennessee, Knoxville, Tenn.—Two years in common. English, two years; modern language, two years; law, one-half year.

Agricultural and Mechanical College of Texas, College Station, Tex.—One year in common. English, four years; history, one-half year; economics, one-half year.

Tulane University of Louisiana, New Orleans, La.—English, one or two years.

University of Utah, Salt Lake City, Utah.—Two years in common. English, one-third year. Economics, one-third year, business methods.

Valparaiso University, Valparaiso, Ind.—English, one year.

Vanderbilt University, Nashville, Tenn.—One year in common. English, one year.

Villanova College, Villanova, Pa.—English, two years; modern language, two years; law, one-half year.

Virginia Polytechnic Institute, Blacksburg, Va.—English, three years; modern language, three years; economics, one year.

State College of Washington, Pullman, Wash.—English, one and one-half years; economics and law, one year. Courses in commercial mechanical engineering and commercial electrical engineering, giving economics, business administration, finances, investments, and contracts.

Washington and Lee University, Lexington, Va.—English, one year; modern language, two years.

West Virginia University, Morgantown, W. Va.—English, one year; law, one-half year.

University of Wisconsin, Madison, Wis.—English, one year; law, one-half year.

University of Wyoming, Laramie, Wyo.—One year in common. English, one year; electives, three years.

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RECORD OF CURRENT EDUCATIONAL PUBLICATIONS.

Comprising publications received by the Bureau of Education to December 22, 1921.

Compiled by the Library Division, Bureau of Education.

CONTENTS.—Proceedings of associations—Educational history—Current educational conditions—Educational theory and practice—Educational psychology; Child study—Psychological tests—Educational tests and measurements—Special methods of instruction—Special subjects of curriculum—Kindergarten and primary school—Rural life and culture—Rural education—Secondary education—Teacher training—Teachers' salaries and professional status—Higher education—Research—School administration—School management—School buildings and grounds—School hygiene and sanitation—Physical training—Play and recreation—Social aspects of education—Child welfare—Religious and church education—Manual and vocational training—Vocational guidance—Workers' education—Agriculture—Home economics—Commercial education—Medical education—Engineering education—Civic education—Education of women—Negro education—Education of deaf—Exceptional children—Education extension—Libraries and reading—Bureau of Education: Recent publications.

NOTE.

The titles included in the classified and annotated list which follows are of books and articles selected by the compilers from the current educational literature of the final months of 1921, subsequent to the preparation of Bulletin, 1921, no. 49, Monthly Record of Current Educational Publications, October, 1921.

This office can not supply the publications listed in this bulletin, other than those expressly designated as publications of the Bureau of Education. Books, pamphlets, and periodicals here mentioned may ordinarily be obtained from their respective publishers, either directly or through a dealer, or, in the case of an association publication, from the secretary of the issuing organization. Many of them are available for consultation in various public and institutional libraries.

PROCEEDINGS OF ASSOCIATIONS.

1421. **Illinois state teachers' association.** Journal of the sixty-seventh annual meeting . . . held at Springfield, Illinois, December 29–31, 1920. 240 p. 8°. (Robert C. Moore, secretary, Carlinville, Ill.)

Contains: 1. C. W. Washburne: Can public schools be fitted to the individual pupils, p. 129–34. 2. P. E. Belting: The development and interpretation of high school spirit as a factor in supervision, p. 138–44. 3. B. F. Shafer: Needed legislation from the viewpoint of the city high school, p. 155–59. 4. U. P. Hoffman: Teaching a country school, p. 164–69. 5. Myrtle L. Kaufmann: Primary room equipment, p. 175–78. 6. C. C. Walther: Relation of the school garden to the life of the child, p. 185–87. 7. A. Wald: Extra curricular activities, their place and supervision, p. 191–93.

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1422. National education association. Addresses and proceedings of the fifty-ninth annual meeting held at Des Moines, Iowa, July 3–8, 1921. Pub. by the Association, Secretary's office, Washington, D. C., 1921. 823 p. 8°. (J. W. Crabtree, secretary, 1201 Sixteenth Street, N. W., Washington, D. C.)

Contains:—

General sessions.—1. B. B. Lindsey: The parenthood of the state, p. 42–54. 2. A. H. Chamberlain: How to secure results through professional organization, p. 55–65. 3. Aurelia H. Reinhardt: Education of the women of the United States, p. 65–74. 4. American program in education, p. 74–128. 5. Reports of committees, p. 128–82. 6. F. M. Hunter: Report of the president on the program and the development of the association, p. 184–208.

National council of education.—(Atlantic City meeting) 7. F. M. Hunter: The most important thing in American education, p. 274–81. 8. Harlan Updegraff: Participation of teachers in school management, p. 284–93. 9. E. J. Ortman: Teacher councils, p. 293–301. 10. Edward Jackson: Daylight in the schoolroom, p. 308–15. 11. Discussion, Thrift education, p. 315–31. (Des Moines meeting) 12. J. H. Phillips: The place of religious sanctions in character training, p. 347–50. 13. G. L. Towne: Can adequate financial support be secured for rural schools? p. 358–62. 14. Report of the committee on changes needed in the elementary school course, p. 364–68.

Department of business education.—15. C. O. Ruggles: Articulation of secondary and higher education in business, p. 369–73. 16. G. F. Knipprath: Qualifications for teaching commercial subjects is secondary schools, p. 373–75.

Department of child hygiene.—17. C. P. Knight: Health supervision of school children on a state-wide basis, p. 379–83. 18. H. O. Jones: A teacher's opportunity from a health officer's viewpoint, p. 386–91. 19. W. A. Evans: A plan for scoring the behavior difficulties of school children, p. 395–96.

Department of classroom teachers.—20. E. A. Fitzpatrick: The teacher's responsibility to the board of education, p. 400–2. 21. Ethel M. Gardner: The school building in its reaction on the teacher's work, p. 404–6.

Department of deans of women.—22. Lilian Welsh: Health instruction and health supervision, p. 410–13. 23. Susan M. Dorsey: Position and responsibility of trained women in education, p. 413–16.

Department of educational publications.—24. B. E. Dill: How to improve textbooks—Sensing the demand, p. 421–25.

Department of elementary education.—25. W. W. Charters: The limitations of the project, p. 428–30. 26. Florence C. Fox: Limits of the project, p. 437–39.

Department of higher education.—27. I. Loeb: Required course in citizenship for college students, p. 456–60.

Department of kindergarten education.—28. C. F. Franzen: Suggestions for deriving standards of measuring achievements of kindergarten-primary children, p. 467–69.

Library department.—29. Adeline B. Zachert: Joy reading in the elementary grades, p. 476–82. 30. W. H. Kerr: The normal-school library; an educational institution, p. 482–88. 31. Sherman Williams: Purpose of the school library, p. 488–92. 32. A. B. Noble: Stepping-stones to correct taste, p. 496–501.

Department of music education.—33. J. R. Kirk: Preparation of music supervisors—shall they have a balanced college education? p. 509–13.

Department of rural education.—(Atlantic City meeting) 34. W. S. Deffenbaugh: Improvement of the village school, p. 531–35. 35. Marion Dana: The Waitsfield experiment, p. 535–39. 36. Edith A. Lathrop: Continued emergency in rural teacher supply and how to meet it, p. 552–57. 37. J. H. Dillard: The negro in rural education and country life, p. 580–83. (Des Moines meeting) 38. Macy Campbell: A national program for consolidation, p. 609–16.

Department of school administration.—(Atlantic City meeting) 39. W. C. Bagley: Federal aid for public schools, p. 618–23. 40. Safety to life in schoolhouse planning, p. 623–630. 41. Comprehensive school building, p. 630–40. (Des Moines meeting) 42. J. J. Donovan: Best current practices in school architecture, p. 642–48.

Department of school patrons.—43. Cecilia Razovski: Approved methods in Americanization, p. 655–61.

Department of superintendence.—44. W. C. Bagley: Aims of rural education, p. 694–99. 45. C. S. Meek: How shall the superintendent spend his time? p. 728–33. 46. H. B. Wilson: Best use of the superintendent's time,

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1422. National education association—Continued.
p. 733–38. 47. Henry Snyder: Probable future of education in the United States.—Its policies and programs, p. 743–50. 48. Lotus D. Coffman: Reconstruction of American education, p. 750–58. 49. Susan M. Dorsey: Improving public school teaching, p. 768–73. 50. H. M. Towner: National aid for education, p. 786–95. 51. H. R. Bonner: Waste in education, p. 795–803.

1423. North central association of colleges and secondary schools. Proceedings of the 26th annual meeting, March 17, 18, and 19, 1921, Chicago, Ill. Part I. Pub. by the Association, 1921. 75 p. 8°. (H. M. Gage, secretary, Coe college, Cedar Rapids, Iowa)
Contains: 1. Proceedings of the commission on higher education with list of accredited institutions, p. 9–17. 2. Proceedings of the commission on secondary schools, with lists of accredited schools, p. 18–48. 3. C. O. Davis: The duties of high school principals, p. 49–69.

EDUCATIONAL HISTORY.

1424. Archer, R. L. Secondary education in the nineteenth century. Cambridge, University press, 1921. xiv, 363 p. 12°.
A study of educational development in England and Wales during the period from 1789 to 1918.

1425. Boyd, William. The history of western education. London, A, & C. Black, limited, 1921. xi, 443 p. 8°.
This book begins with the educational ventures of the ancient Greeks, and continues the narrative to the beginnings of scientific pedagogy in the twentieth century. It is essentially a record of educational evolution, with constant introduction of the personal element by reference to the experiences and thoughts of great educators.

1426. Robinson, Rodney P. The Roman school teacher and his reward. Classical weekly, 15: 57–61, December 5, 1921.
Depicts the lot of the Roman school teacher as gleaned from the Latin authors.

1427. Weathersby, William Henington. A history of educational legislation in Mississippi from 1798 to 1860. Chicago, Ill., The University of Chicago, [1921] 204 p. 8°. (Supplementary educational monographs, published in conjunction with the School review and the Elementary school journal, vol. III. no. 4. July 1921. Whole no. 16)

CURRENT EDUCATIONAL CONDITIONS.

GENERAL AND UNITED STATES.

1428. Alexander, Carter. The Wisconsin state department of public instruction under Cary. School and society, 14: 529–44, December 10, 1921.
An analysis of the achievements and the methods of procedure of the Wisconsin state department of public instruction in recent years.

1429. Allen, Riley H. Education and race problems in Hawaii. American review of reviews, 64: 613–24, December 1921.
Says that the problems are social and economic, religious and educational, cultural and political. Emphasizes the preponderance of Orientals in Hawaii. Illustrated.

1430. Blakely, Paul L. Is illiteracy increasing? America, 26: 190–91, December 10, 1921.

1431. Bunker, Frank F. Pan-Pacific education. Survey, 47: 214–15, November 5, 1921.
Discusses the work of the conference on education at Honolulu, in August 1921.

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1432. Bunker, Frank F. The Pan Pacific educational conference. Mid-Pacific magazine (Honolulu, T. H.) 22:417–31, November, 1921. illus.

1433. Butler, Nicholas M. Education and individual liberty. American education, 25:113–16, November 1921.

Address delivered at the Convocation of the University of the State of New York, October 1921.

1434. Cooper, Richard Watson. "Better attendance in Delaware schools," being a series of newspaper articles and statistical tables used during school attendance week to emphasize the need of better attendance in Delaware schools. [Wilmington] The Service citizens of Delaware [1921] 62 p. incl. tables. 8°. [Service citizens of Delaware. Bulletin] vol. III, no. 4.)

1435. Deffenbaugh, W. S. Some recommendations for the improvement of the school system of Sparta, Wisconsin. Sparta, Wis., Board of education, [1921] 23p. 12°.

1436. Eastwood, E. V. A national system of education. Kentucky high school quarterly, 8:1–8, August 1921.

A thoroughly centralized national system of control, which system is democratic and distinctively American, is essential to the complete future development of public education.

1437. Harding, Warren G. A generation bowed at the altar of materialism. School life, 7:49, 59–60, November 1921.

Also in William and Mary literary magazine, 29:123–33, November 1921.

President Harding's address at the dedication of Dr. J. A. C. Chandler as president of William and Mary College, October 19, 1921, at Williamsburg, Va.

President Harding discusses the educational crisis which confronts the nation.

1438. Magill, H. S. Education and the federal government. School and society, 14:259–63, October 8, 1921.

A résumé and discussion of the current plans for reorganizing the educational functions of the nation.

Also published in pamphlet form as Legislative commission series no. 2, and in Journal of the National education association, 10:155–58, November 1921.

1439. Pan-Pacific union. First Pan-Pacific educational conference, Honolulu, August 11–24, 1921. Program and proceedings. [Honolulu. 1921] 247 p. front. 4°. (Dr. Frank F. Bunker, executive secretary, Honolulu, Hawaii)

Conference held under auspices of the Pan-Pacific union and called by the U. S. Bureau of education.

CONTENTS.—Officers and organization.—List of accredited delegates.—Report of standing committees and resolutions adopted.—Daily program of sessions and of entertainment.—Addresses and discussions.

1440. Sutton, W. S. Federal activity in the educational affairs of the states. American school board journal, 63:33–35, December 1921.

Arguments against the Towner-Sterling bill.

FOREIGN COUNTRIES.

Latin America.

1441. Diez, Rodrigo. The recent International congress of students. Bulletin of the Pan American union, 53:546–55, December 1921.

An account of the International congress of students which opened in the city of Mexico on September 21, 1921. The great majority of the delegates to the congress were from Latin American nations, but the United States and some European countries were also represented.

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1442. **Inman, Samuel Guy.** Paraná, exponent of North American education. The story of the remarkable influence of Yankee school teachers in Argentina. Bulletin of the Pan American union, 53: 463–74, November 1921. illus.

An account of the first normal school and the first kindergarten in Argentina, founded by American teachers in Paraná, capital of the province of Entre-Rios.

Great Britain and Ireland.

1443. **Balfour, *Sir* Graham.** Educational administration, two lectures delivered before the University of Birmingham in February, 1921. Oxford, The Clarendon press, 1921. 62 p. 8°.

The first lecture shows the historical evolution of public educational administration in England, and discusses the central and local authorities. The second lecture deals with the personal element in local official administration.

1444. **Henry, R. M.** Irish schools of tomorrow. Survey, 47: 305–6, November 26, 1921.

A summary of the history of education in Ireland, with speculations regarding the future.

1445. **Hewlett, William.** Miseducating the masses. Nineteenth century, 90: 971–85, December 1921.

A plea for more ideality in education, and home culture. Discusses the sources of vulgarity in modern art, literature, made, and the theatre, which tend to cheapen or deform impressions of life. Conditions in England considered. Continues an article by Mr. Hewlett in the January 1921 number of the Nineteenth century, entitled Parents first: an aspect of the education question.

1446. **Sampson, George.** English for the English; a chapter on national education. Cambridge, University press, 1921. vii, 112 p. 12°.

1447. Voluntary schools. Text of the new bill. Times (London) Educational supplement, 12: 516, November 19, 1921.

Full text of the Education bill recently introduced into the House of commons by Thomas Davies. Editorial comments on the measure are made on page 519 of the same issue of the Times supplement.

Germany and Russia.

1448. **Pasvolsky, Leo.** Education under communism: the results of soviet education. Educational review, 62: 324–31, November 1921.

Says that Russian communism has not, during its three years' experiment, made any contribution to the world's store of knowledge in the domain of education.

1449. **Puckett, H. W.** Socialists in German education. Survey, 47: 369–71, December 3, 1921.

Post-war changes in educational system of Germany. Describes the Academy of labor, newly founded at Frankfort; the creation of Hamburg university, etc.

EDUCATIONAL THEORY AND PRACTICE.

1450. **Adamson, J. E.** The individual and the environment; some aspects the theory of education as adjustment. London, New York [et Longmans, Green and co., 1921. x, 378 p. 8°.

This book supports the view that in the conception of the adjustment individual and environment, there is a fundamental principle about which rational theory of education can be developed.

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1451. **Baillie, J. B.** Studies in human nature. London, G. Bell and sons, ltd., 1921. 296 p. 8°.

A philosophical criticism of some phases of human nature, a work which should have a particular effect on the higher aims of national education. Among the topics discussed are the realistic character of knowledge, the nature of memory-knowledge, the place of philosophy in human nature, and science and the humanities.

1452. **Bain, A. Watson,** *ed.* The modern teacher; essays on educational aims and methods. With an introduction by W. H. Hadow. London, Methuen & co., ltd. [1921] xv, 272 p. 8°.

Contains essays by prominent English educators on teaching the following subjects: English literature, English composition, modern languages, classics, mathematics, science, geography, history, citizenship, religion and morals.

1453. **Bode, Boyd H.** Fundamentals of education. New York, The Macmillan company, 1921. xi, 245 p. 12°. (The modern teachers' series, ed. by W. C. Bagley)

An interpretation of present-day educational problems from the standpoint of pragmatic philosophy, taking up aims or ideals of education and the nature of the mind or intelligence with which education has to deal.

1454. **Doyle, J. H.** The call of education. Volume one. Biological integrity. Hammond, Ind., The J. H. Doyle company [1921] 289 p. 12°.

1455. **Gould, Frederick J.** History, the teacher; education inspired by humanity's story. With a preface by F. W. Sanderson. London, Methuen & co., ltd. [1921] 132 p. 12°.

1456. **Hunter, George W.** An experiment in the use of three different methods of teaching in the class room. School science and mathematics, 21: 875–90, December 1921.

To be continued.

1457. **James, Benjamin B.** Formal discipline again. School and society, 14: 477–82, November 26, 1921.

The conclusion of the article is that nothing we can do or make the student do will increase his native endowment.

1458. **Kilpatrick, William H.** The wider study of method. Journal of educational method, 1: 8–13, October 1921.

1459. **McCormack, Thomas J.** The simplicist philosophy. School and home education, 41: 6–13, September 1921.

1460. **Smith, Charles T.** The school of life, a theatre of education. London, G. Richards, ltd., 1921. vii, 120 p. plates. 12°.

1461. **Willmann, Otto.** The science of education in its sociological and historical aspects. Authorized translation from the 4th German edition by Felix M. Kirsch. In two volumes. Vol. I. Beatty, Pa., Archabbey press, 1921. xvi. 351, 8 p. 8°.

EDUCATIONAL PSYCHOLOGY; CHILD STUDY.

1462. **Bruce, H. Addington.** Self-development; a handbook for the ambitious. New York and London, Funk & Wagnalls company, 1921. x, 332 p. 12°.

1463. **Cameron, Edward Herbert.** Psychology and the school. New York, The Century co., 1921. xiv. 339 p. illus., diagrs. 8°. (The Century education series.)

Appendix (mental tests): p. 319–35.

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1464. **Hughes, W. Hardin.** A practical need for social-individual psychology in high school education. Educational administration and supervision. 7: 527–32, December 1921.

Presents important facts relative to mind and human behavior, also a list of references for social-individual psychology.

1465. **Kilpatrick, William H.** Mind-set and learning. Journal of educational method, 1: 95–102, November 1921.

To be continued.

A popular commentary and elaboration of some of the matter presented in E. L. Thorndike's Educational psychology. This account is preliminary to certain further discussions.

1466. **Watson, John B.** *and* **Watson, Rosalie R.** Studies in infant psychology. Scientific monthly, 13: 493–515, December 1921.

Prepared on the basis of the experimental work done in the psychological laboratory of Johns Hopkins university in 1919 and 1920.

PSYCHOLOGICAL TESTS.

1467. **Bird, Verne A.** General intelligence, machine-shop work, and educational guidance in the junior high school. School review, 29: 782–86, December, 1921.

A study to determine within a limited field of shop work the relative chances of success for the boy with a high I. Q. and the one of low-grade intelligence.

1468. **Brooks, Fowler D.** Rate of mental growth, ages nine to fifteen. Journal of educational psychology, 12: 502–10, December 1921.

Study based on experiments made at the training school of the Mankato, Minn., State teachers' college, in May 1918, 1919, and 1920. No significant sex differences in rate of mental development were found.

1469. **Burnham, William H.** Sex differences in mental ability. Educational review, 62: 273–84, November 1921.

Says that the various tests of ability to do different kinds of work give little satisfactory evidence that there are distinctly sex differences.

1470. **Clement, J. A.** Intelligence tests and the marks of scholarship men in college. Educational administration and supervision, 7: 510–16, December 1921.

Holds that psychological tests can be made criteria for choosing scholarship men together with the marks and recommendations made by high school teachers and officers.

1471. **Coxe, Warren W.** School variation in general intelligence. Journal of educational research, 4: 187–94, October 1921.

Presents data regarding the general intelligence of 24 sixth grades in 24 elementary schools in Cincinnati. The Otis group intelligence scale was used.

1472. **Guy, J. Freeman.** The intelligence of the high school pupil. Pennsylvania school journal. 70: 83–87, November 1921.

An address delivered before the high school section, Pennsylvania state educational association, December 27, 1920, by Mr. Guy, the director of research and measurement of the Pittsburgh public schools.

1473. **Herring, John P.** Verbal and abstract elements in intelligence examinations. Journal of educational psychology, 12: 511–17, December 1921.

A study of relations existing between human intelligence on the one hand and certain definite abilities on the other. Concludes that "abstract and verbal tests afford better means for the prediction of human intelligence and the control of human situations than do concrete and non-verbal tests."

1474. **Price, E. D.** The Enid plan of classification of pupils, according to mental ability. [Enid, Oklahoma] The Board of education [1921] cover-title, [12] p. 8°.

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1495. **Pressey, Sydney L., *and* Cayco, Florentine**—Continued.

Points out "the inadequacy, as a means for investigating the educational efficiency of a school or school system, of (*a*) statements of retardation, or other summaries of the age-grade distribution, (*b*) measurement of achievement without reference to evenness of development, or (*c*) measurement of ability without detailed statement of the correlation between ability and achievement in individual cases."

1496. **Thorndike, Edward L.** Measurement in education. Teachers college record, 22: 371–79, November 1921.

An address delivered at the opening exercises of Columbia university, September 28, 1921.

1497. **Van Wagenen, M. J.** The Minnesota English composition scales; their derivation and validity. Educational administration and supervision, 7: 481–99, December 1921.

Describes a plan for the construction of three sets of English composition scales, each set of specimens in the scales "to be independently evaluated for thought content, for sentence and paragraph structure, and for mechanical perfection." The scales were used in an investigation in the secondary schools of Minnesota, during the school year 1917–18, "to measure the amount of improvement that would result as a consequence of theme writing systematically carried out through a period of several weeks."

1498. **Weeks, Angelina L.** Terman vocabulary as a group test. Journal of educational psychology, 12: 532–36, December 1921.

1499. **Wyman, J. Benson, *and* Wendle, Miriam.** What is reading ability? Journal of educational psychology, 12: 518–31, December 1921.

An effort to get at a method by which to determine whether the so-called reading tests *do* measure reading ability. Says that none of the English tests has as high reliability as the Terman group test.

SPECIAL METHODS OF INSTRUCTION.

VISUAL INSTRUCTION.

1500. **Handschin, W. F.** Visual instruction in agricultural education. Moving picture age, 4: 18–19, 32, December 1921.

A paper read at the first annual meeting of the National academy of visual instruction, by Mr. Handschin, who is director of agricultural extension, University of Illinois.

1501. **Turner, C. E.** An evaluation of visual education. Visual education, 2: 4–9, November 1921.

Prepared for publication in the Tufts college graduate by the assistant professor of biology and public health, Massachusetts institute of technology.

OTHER METHODS.

1502. **Moore, Clyde B.** A demonstration school. Survey, 47: 211, 214, November 5, 1921.

Purpose and activities of the University demonstration schools of the University of Pittsburgh, which endeavors "to assist boys and girls in the selection, promotion and realization of those activities yielding the largest life values."

1503. **Parkhurst, Helen.** The Dalton laboratory plan. Journal of education and School world (London) 53: 694–96, November 1921.

The Dalton plan demands that the instructors shall outline the work of the year (the curriculum of projects), so that "each pupil may know and understand the scope and nature of the work that he, as a member of a form, is expected to accomplish."

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SPECIAL SUBJECTS OF CURRICULUM.

READING.

1504. **Courtis, S. A.** Analysis of reading ability. Journal of educational research, 4: 287–93, November 1921.
Describes the conclusions upon which the Detroit construction work in silent reading is at present based.

1505. **Hosic, James Fleming.** Empirical studies in school reading, with special reference to the evaluation of literary reading books. New York city, Teachers college, Columbia university, 1921. viii, 174 p. tables, diagrs. 8° (Teachers college, Columbia university, Contributions to education, no. 114)

1506. **Parker, Samuel C.** How to teach beginning reading. Elementary school journal, 22: 175–88, 255–68, November, December 1921.
Third and fourth articles, concluding a series.

1507. **Smith, Franklin O.** A silent reading survey. Inter-mountain educator, 17: 51–55, October 1921.
The report of an investigation authorized by the Educational council of the Inland empire teachers' association.

1508. **Sorrenson, Fred S.** Thought presentation in oral reading. Education, 42: 219–26, December 1921.
Says that the initial step in satisfactory oral reading consists in efficient thought-gathering and presentation.

SPELLING.

1509. **Andersen, William Niclaus.** Determination of a spelling vocabulary based upon written correspondence. Iowa City, The University [1921] 66 p. 8°. (University of Iowa studies in education, vol. II, no. 1)
On cover: University of Iowa studies, 1st. ser. no. 52, July 1, 1921.
Bibliography: p. 63–66.

1510. **Newark. Board of education.** Spelling survey in the public schools of Newark, N. J. Newark, N. J., Board of education, 1920. 32 p. incl. tables, diagrs. 8°. (On cover: Monograph no. 7)

ENGLISH AND COMPOSITION.

1511. **Chicago. Board of education. Education division.** English in the elementary schools. . . September, 1921. Peter A. Mortenson, superintendent. 1 p. l., 147 p. 8°. (Bulletin no. 21)

1512. **Great Britain. Committee to inquire into the position of English in the educational system of England.** The teaching of English in England; being the report of the departmental committee appointed by the president of the Board of education to inquire into the position of English in the educational system of England. London, His Majesty's stationery office, 1921. xv, 394 p. 12°.

1513. **Hosic, James F.** An experiment in cooperation. II. Reading with a purpose. III. Reading as study. Journal of educational method, 1: 13–16, October: 102–7, November 1921.

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1525. **Olmstead, E. W.** A justification of modern languages in our schools. Modern language journal, 6: 1–11, October 1921.
Address given before the Modern language teachers of the Central West and South, May 1921.

1526. **Onís, Federico de.** Memoria del curso 1920–1921 presentada al consejo general ejecutivo. Madrid, Nueva York, 1921. 59 p. 12°. (Junta para ampliación de estudios. Institute de las Españas en los Estados unidos.)

1527. **Spiker, Claude C.** The foreign language teacher as a national asset in reconstruction. Modern language journal, 6: 65–73, November 1921.
The value of the profession of foreign language teaching as a national asset.

MATHEMATICS.

1528. **National council of teachers of mathematics. National committee on mathematical requirements.** College entrance requirements in mathematics. Preliminary report. Mathematics teacher, 14: 224–45, May 1921.

1529. **Breslich, E. R.** Testing as a means of improving the teaching of high-school mathematics. Mathematics teacher, 14: 276–91, May 1921.
Does not refer to "the so-called standardized test, but to the ordinary class examination, or class test."

1530. **Davis, Alfred.** Teaching pupils how to study mathematics. Mathematics teacher, 14: 311–20, October 1921.
Says among other things that the pupil must have enough information about the assigned work to convince him of its importance and to arouse his interest in it.

1531. **Marsh, John A.** The relative standing of mathematical and nonmathematical pupils. Educational administration and supervision, 7: 458–66, November 1921.
Relative standing in second and third year high-school work of two groups of pupils in the English high school, Boston, Mass. Says that in their work of the second and third years the pupils who had studied mathematics in their first year manifested a distinct superiority over those who had not studied mathematics.

1532. **Minnick, J. H.** The aims of mathematical education. Mathematics teacher, 14: 297–304, October 1921.
Says the school should give to each child such "a knowledge of mathematics as will serve as a basis for future preparation, if progress in his work should demand it."

1533. **Terry, Paul W.** The reading problem in arithmetic. Journal of educational psychology, 12: 365–77, October 1921.
An investigation of the methods employed by children in the gradual acquirement of the power of reading numerals.

SCIENCE.

1534. **Franklin, William S.** What is the matter with physics teaching? Science, n. s. 54: 475–79, November 18, 1921.
Also in Engineering education, 12: 134–42, November 1921.
Contends that students dislike physics because they accomplish so little in the study of it in elementary college courses. The writer says the reason for this is because the simple, fundamental, mathematical ideas and methods which constitute elementary physics are not properly emphasized in the class room, and not presented with clearness and brevity in textbooks.

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1535. **Johnson, E. H.** The present status of the history of science in American colleges and universities. Science, n. s. 54: 585–95, December 16, 1921.
Study based on a questionnaire sent to nearly 400 colleges and universities. Says that replies show the need of adequate textbooks on the history of science.

1536. **Loomis, Alice M., *and* Carr, Ida F.** A course in general science for vocational home economics schools. General science quarterly, 6: 284–92, November 1921.

1537. **Webb, Hanor A.** General science instruction in the grades. Pt. I. A quantitative analysis of general science texts. Pt. II. The reaction of children of the last three grammar grades to science. Nashville, Tenn., George Peabody college for teachers [1921] 105 p. 8°. (George Peabody college for teachers. Contributions to education, no. 4)

GEOGRAPHY.

1538. **Chicago. Board of education. Education division.** Elementary social science, geography, history. September, 1921. Peter A. Mortenson, superintendent of schools. [Chicago, 1921] cover-title, 64 p. 8°.

1539. **Peattie, Roderick.** Introductory geography for colleges. Journal *of* geography, 20: 318–20, November 1921.
An analysis of the elements of environment should be the basis of study.

HISTORY.

1540. **Pierce, Bessie L.** A survey of methods courses in history. Historical outlook, 12: 315–18, December 1921.
The results of a questionnaire sent out by the writer.

PHILOSOPHY AND SOCIOLOGY.

1541. **Bogardus, Emory S.** Problems in teaching sociology. Journal of applied sociology (Los Angeles) 6: 19–24, December 1921.

1542. **Brown, William Adams.** The future of philosophy as a university study. Journal of philosophy, 18: 673–82, December 8, 1921.

MUSIC.

1543. **Kirk, John R.** Preparation of music supervisors. Shall they have a balanced college education? School music, 22: 7–10, November 1921.
Given before the meeting of the National education association, July 1921.

1544. **Hadow, Henry.** The place of music in a liberal education. School and society, 14: 272–78, October 8, 1921.
Address at the Edinburgh meeting of the British association for the advancement of science.

ART.

1545. **Fliedner, Helen M.** Some of the things the Cleveland public schools are doing in art. Cleveland O., Division of publications, Board of education, 1921. 32 p. illus. 12°. ([Cleveland. Board of education.] Monograph no. 11)

DRAMATICS.

1546. The drama a recognized college subject. School life, 7: 29–30, October 1921.
A review of what colleges and universities are doing to further and increase interest in theater arts.

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1547. **Haynes, Ernest F.** The drama course in the University high school. School review, 29: 746–57, December 1921.

Discusses a course in drama organized as an elective English offering for juniors and seniors of the University high school, University of Chicago, in 1917. Presents an outline for study and report on play, with short bibliography of playmaking, stagecraft, and collection of plays.

1548. **Knapp, Margaret C.** The school play. English leaflet, 21: 1–12, December 1921.

1549. **Stratton, Clarence.** Producing in little theaters. New York, H. Holt and company, 1921. 258 p. front., plates. 12°.

"Educational dramatics": chapter XI, p. 197–224.

SAFETY.

1550. **Maris, Clarence.** Dangers and chemistry of fire. Prepared under the direction of Vernon M. Riegel, superintendent of public instruction. Columbus, Ohio, The F. J. Heer printing co., 1921. 2 v. 8°.

CONTENTS: [v. 1] For primary schools.—[v. 2] For grammar schools.

KINDERGARTEN AND PRIMARY SCHOOL.

1551. **Robinson, Isabel.** A project in community life in the kindergarten. Elementary school journal, 22: 194–203, November 1921.

An experiment tried in the kindergarten of the university elementary school, School of education of the University of Chicago. Projects were suggested by the children as an outcome of their building a toy city, such as schools, churches, banks, theatres, bakery, etc.

RURAL LIFE AND CULTURE.

1552. **Hoag, Emily F.** The national influence of a single farm community. A story of the flow into national life of migration from the farms. Washington, Government printing office, 1921. 55 p. plates, maps. 8°. (U. S. Department of agriculture. Bulletin no. 984, December 1, 1921.)

Shows the wide influence which people migrating from Belleville, Jefferson county, N. Y., have exerted on American life in general.

RURAL EDUCATION.

1553. **Rural life conference.** Proceedings of . . . called by his Excellency, Honorable Westmoreland Davis, in the Hall of the House of delegates, May 17–18, 1921. 105 p. 8°. (University of Virginia record. Extension series. vol. 6, no. 11, October 1921)

Contains: 1. Discussion. Equality of educational opportunity for the rural school child, p. 20–28.

1554. **Bagley, William C.** Aims of rural education. American school, 7: 200–1, 211, October 1921.

The rural school should endeavor to acquaint its pupils with occupatio other than agricultural.

1555. **Baltimore county, Md. Board of school commissioners . . .** Course study, Baltimore county, Maryland, public schools. Grades I to VI Prepared by Lida Lee Tall and Isobel Davidson, under the directio of Albert S. Cook, superintendent. Baltimore, Warwick & York, inc., 1921. 698 p. 8°.

At head of title: 1921 revision.

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1556. **Carney, Mabel.** The status of rural education in the United States. A memorandum. American child, 3: 274–80, November 1921.
Statistical data on the subject.

1557. **Hayes, A. W.** The community value of the consolidated school. Southern school work, 10: 36–39, September 1921.
The author concludes that the consolidated school offers the best solution for the construction of a rural community.

1558. **Holloway, William J.** Why supervise rural schools? Virginia journal of education, 15: 97–100, 118, November 1921.
Reasons given why rural schools should be supervised.

1559. **Payne, Bruce R.** The rural school as a neglected yet fundamental and necessary American enterprise. Texas school journal, 39: 9–11, September 1921.
A severe arraignment of the country school's lack of greater public interest and help.

1560. **Shuler, Marjorie.** Truth about rural schools in New York state. American review of reviews, 64: 641–44, December 1921.
Discusses the results of a survey made by the New York state league of women voters, in cooperation with the State department of education.

SECONDARY EDUCATION.

1561. **National association of secondary school principals.** Fifth yearbook, 1921. Pub. by the Association; [Menasha, Wis., George Banta publishing company] 1921. xxxviii, 69 p. 8°. (H. V. Church, secretary-treasurer, J. Sterling Morton high school, Cicero, Ill.)
Contains: 1. E. D. Lyon: The submerged tenth, p. 1–7. 2. C. C. Tillinghast: The scope of moral education in secondary schools, p. 7–14. 3. J. R. Powell: Social problems in the high school, p. 15–24. 4. J. L. Tildsley: Some possibilities arising from the use of intelligence tests, p. 45–54. 5. F. H. J. Paul: The growth of character through participation in extra-curriculum activities, p. 54–60.

1562. **Counts, George S.** The selective principle in American secondary education. School review, 29: 657–67, November 1921.
Based on a study of the high-school populations of four cities: Bridgeport, Conn.; Mt. Vernon, N. Y.; St. Louis, Mo.; and Seattle, Wash. Gives classification of occupations of parents, character of the cities studied, etc. To be continued.

1563. **Davis, Jesse B.** A survey of the organization and administration of high schools in the state of Connecticut. Hartford, Conn., State board of education, 1921. 37 p. 12°. (On cover: State board of education. High school bulletin 1. Series 1921–1922.)

1564. **Fuller, J. B.** The junior high school in X, Michigan. American schoolmaster, 14: 327–38, November 1921.
Describes a high school located in a small rural community of Michigan, the town of X, which according to the census of 1920 has 1,888 inhabitants, and is the center of a prosperous agricultural district.

1565. **Jones, J. D. R.** Free secondary education. School review, 29: 758–60, December 1921.
Writer gives his experiences in South Africa. Comments on Dr. Judd's article in School review for February 1921, on "The American experiment of free higher education."

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1566. **Koos, Leonard V.** The junior high school and the elementary school. Educational review, 62: 309–16, November 1921.
Says that the effect of a general introduction of the junior high school plan upon the elementary school is highly advantageous to the latter.

1567. **Newlon, Jesse H.** High school fraternities. Educational administration and supervision, 7: 372–79, October 1921.
The author believes that there is not one good thing to be said for the high school secret society.

1568. **Roemer, Joseph.** A study of Florida high schools. Issued by the Department of secondary education. [Gainesville, Fla., The University, 1921] 29 p. tables. 8°. (On cover: University record, vol. xvi, no. 4. Extra no. 1)

1569. **Slack, S. A.** The junior high school movement and its relation to modern education. Inter-mountain educator, 17: 56–62, October 1921.
A careful explanation and survey of the junior high school.

1570. **Smithey, W. R.** The organization of the junior high school. High school quarterly, 10: 43–50, October 1921.

1571. **Spain, Charles L.** The intermediate school in Detroit, by Charles L. Spain, Arthur B. Moehlman and H. L. Harrington. [Detroit, Board of education 1921] 39 p. incl. plans. 8°. (The Detroit educational bulletin. Research bulletin, no. 6. December, 1921)

TEACHER TRAINING.

1572. **Burgess, W. Randolph.** The rate of progress in teacher preparation. Journal of educational research, 4: 180–86, October 1921.
Discusses the improvement in the education of teachers in service in 10 states since 1910.

1573. **Good, Harry G.** The legal status of supervised teaching. Educational review, 62: 298–308, November 1921.
Says that the legal status of teacher-training will not be improved until the public is convinced of its value. Emphasizes the practical training of high school teachers.

1574. **Miller, H. L.** The problem of preparing high school teachers. Kansas teacher and Western school teacher, 13: 11–13, December 1921.

1575. **Scott, Z. E.** The great need of our schools—Better teaching. How to secure it. Journal of the New York state teachers' association, 8: 160–67, October 1921.
"To have better teaching, it is most essential that one accept the principle that teachers can continually improve while in service."

1576. **Waples, Douglas.** Teaching teachers to "motivate." Educational administration and supervision, 7: 439–46, November 1921.
Describes the aim, content, organization, and results of a semester course in "motivation" as conducted experimentally by the education department of an arts-and-science college under the title, "educational psychology."

TEACHERS' SALARIES AND PROFESSIONAL STATUS.

1577. **Adams, John.** The new organization of teachers in England. Educational review, 62: 285–97, November 1921.
Organization and work of the Registration council, which was established by an order of the Privy council, February, 1912.

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1578. **Bixby, Herbert D.** The ethics of the teaching service. [Cleveland] Division of publications, Cleveland board of education, 1921. 16 p. 12°. ([Cleveland. Board of education.] Monograph no. 27])

1579. **Bonner, H. R.** Salaries of teachers in four-year high schools in 1918 and 1921. American school board journal, 63: 56–57, December 1921.

1580. **Brooks, Samuel S.** Measuring the efficiency of teachers by standardized tests. Journal of educational research. 4: 255–64, November 1921.

Recognizes five main factors in a teacher's efficiency: (1) Managing ability; (2) natural aptitude for the work; (3) method and technic of teaching; (4) industry and interest in work; (5) personality.

1581. **Brubacher, A. R.** The teaching personality quotient. American education, 25: 108–12, November 1921.

A personality study is proposed. The projective power of plus characteristics is what wins success and determines the size of the teaching personality quotient.

1582. **Eaves, Lucile,** *ed.* Old-age support of women teachers. Provisions for old age made by women teachers in the public schools of Massachusetts. A study by the department of research of the Women's educational and industrial union. Boston, Mass., 1921. 122 p. graphs, tables. 8°. (Studies in economic relations of women, vol. XI)

1583. **Hawes, E. B.** Problems of high school certification of public schools. Ohio teacher, 42: 53–55, October 1921.

A discussion of the eleven certificates issued for high school teaching, the author advocating three only, namely, the provisional, life and three year certificate issued by examination.

1584. **Hillyer, Thomas A.** The teacher and partisan activity. Educational administration and supervision, 7: 421–26, November 1921.

1585. **Hurt, Huber William.** Self-help in teaching; a study of the teacher-learner partnership. New York, The Macmillan company, 1921. 98 p. 16°.

1586. **Johnson, S. W.** The teacher's load. American school board journal, 63: 36–39, November; 43–44, 112, December 1921.

An attempt to find a median or fair estimate of the common practice for assignment of work to teachers.

1587. **Jones, Olive M.** The relation of the principal to the teacher and standards for judging the effectiveness of teaching. School and society, 14: 469–77, November 26, 1921.

Given at meeting of National association of elementary school principals, Des Moines, July 1921.

1588. **McConn, Max.** The genus professor. Nation, 113: 537–39, November 9, 1921.

An article along humorous lines in which the writer differentiates four principal types or species of the university professor: (1) *Professor antiquus;* (2) *professor germanicus;* and (3) *professor uptodaticus.*

1589. **Mendenhall, Edgar.** Development and use of a teacher-rating employment card. Techne, 4: 5–11, June 1921.

1590. **Rich, F. M.** Better selection of prospective teachers. American school board journal, 63: 33–34, October 1921; 39–40, November 1921.

1591. **Sears, J. B.** Teacher participation in public school administration. American school board journal, 63: 29–32, 113–14, October 1921.

Teachers should participate in the formulation of school policies, participation being in the form of "staff" service, but should not have power to make final decisions as to policy.

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1592. **Wentzel, W. A.** A proposed plan for teacher rating. High school quarterly, 10: 26–35, October 1921.

Dissatisfaction with the ratings of teachers has been because the ratings have been "on subjective estimates of certain qualities, with no reference to the quality of the teacher's product."

HIGHER EDUCATION.

1593. **American association of university professors.** Bulletin, vol. 7, no. 6, October 1921. Cambridge, Mass., American association of university professors, 1921. 55 p. 8°. (H. W. Tyler, secretary, 222 Charles river road, Cambridge, Mass.)

Contains: 1. Preliminary report of committee H, on increased migration and interchange of graduate students, p. 16–20. 2. Preliminary report of committee W, on status of women in college and university faculties, p. 21–32. 3. Recent educational discussion, p. 33–51.

1594. **Association of American colleges.** Addresses at seventh annual meeting, held at New York city, January 6, 7, 8, 1921. Chicago, Ill., Association of American colleges, 1921. 118 p. 8°. (*Its* Bulletin, vol. 7, no. 3, April 1921.) (Robert L. Kelly, executive secretary, 111 Fifth avenue, New York city)

Contains: 1. E. E. Brown, C. A. Richmond, Mary E. Woolley, J. R. Angell: The college contribution to American education, p. 5–25. 2. David Mackenzie, Wilson Farrand: Types of junior colleges and their relation to senior colleges, p. 28–47. 3. Frank Nicolson, Frank Aydelotte: Report of the Association commission on faculty and student scholarship, p. 48–77. 4. R. C. Flickinger: Report of the commission of the council of church boards of education on academic freedom and tenure of office, p. 81–87. 5. G. F. Zook: Higher education and training for citizenship, p. 88–101. 6. F. W. Lewis: Reasons why students choose particular colleges, p. 106–18.

1595. **Abbott, Wilbur C.** The guild of students. Atlantic monthly, 128: 618–25, November 1921.

"In these two things—closer cooperation between the guild of scholars and the guild of students, and acceptance of the obligations of their system by the undergraduates and the alumni—seems to lie the only perceptible basis for the proper development of the future college and university. But there is a third—the recognition of this problem for what it is; an integral part, not only of the situation as it exists, but of the education of our youth in its entirety."

1596. **Aydelotte, Frank.** Better training for our best minds. School and society, 14: 387–92, November 5, 1921.

Inaugural address of the president of Swarthmore college, October 1921.

1597. **Bevan, Ralph H.** International universities: The tested remedy for war and the H. C. L. American Oxonian, 8: 125–32. October 1921.

1598. **Brumm, John Lewis,** *ed.* Educational problems in college and university. Addresses delivered at the educational conference held at the University of Michigan, October 14, 15, and 16, 1920, on the occasion of the inauguration of President Marion LeRoy Burton. Ann Arbor, The University of Michigan, 1921. 296 p. 8°.

1599. **Buck, Philo M., *jr.*** American universities and liberal culture. Educational review, 62: 410–21, December 1921.

Says that the universities are suffering from an excess of administrative machinery to the neglect of the teaching function.

1600. **Emerton, Ephraim.** Learning and living, academic essays. Cambridge, Harvard university press; London, H. Milford, 1921. vii, 325 p. 12°.

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1601. **Farrand, Livingston.** Universities and the world crisis. School and society, 14: 379–87, November 5, 1921.

Inaugural address of President Farrand, of Cornell university, October 1921.

1602. **Gilbreth, Frank B., *and* Gilbreth, L. M.** The work of fatigue elimination in colleges. Nation's health, 3: 675–77, December 1921.

Describes work at Swarthmore college and the establishment of Fatigue elimination day as one of the special functions of the institution.

1603. **Koos, Leonard V., *and* Crawford, C. C.** College aims past and present. School and society, 14: 499–509, December 3, 1921.

1604. **Macmillan, Cyrus.** McGill and its story 1821–1921. London, John Lane; New York, John Lane company [etc.] 1921. 304 p. plates. 8°.

A history of McGill university near Montreal, Canada.

1605. **Rose, J. Holland.** Impressions of American universities. Contemporary review, 120: 644–51, November 1921.

The writer, who delivered a short course of lectures at American universities during April–August, 1921, says that the relations between cities and their universities in the United States are closer and more vital than in England.

1606. **Stewart, George W.** A problem in the education of college students of superior ability. School and society, 14: 439–47, November 19, 1921.

Answers the question, "How can the opportunities afforded by the college to students of superior ability be increased?"

1607. **Stimpson, George W.** The story of Valparaiso university, including an account of the recent period of turbulence. With an introduction by Jacob B. Farris. [Chicago] The author, 1921. 167 p. front., illus. 12°.

1608. **Tatlock, John S. P.** The intellectual interests of undergraduates. University of California chronicle, 23: 364–91, October 1921.

The writer does not share the violent pessimism of many persons who are writing about present college education.

1609. **Vold, Lauriz.** Legal separation of function in university organization. Quarterly journal of the University of North Dakota, 12: 63–87, October 1921.

The paper discusses how far the law has provided for separation of function in university organization as affecting the University of North Dakota with special reference to discipline.

1610. **Williams, Stanley T.** Why not teach freshmen? North American review, 214: 817–24, December 1921.

Emphasizes with humorous comments the joys of teaching freshmen.

RESEARCH.

1611. **Kellogg, Vernon.** The National research council. Educational review, 62: 365–73, December 1921.

Describes the establishment, organization, and functions of the council, which was founded in 1916 under the auspices of the National academy of sciences. In 1918 it was invited by an executive order of the President of the United States to reorganize and perpetuate itself as a peace-time organization "to stimulate research in mathematics, physical and biological sciences," etc.

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SCHOOL ADMINISTRATION.

1612. **Alexander, Carter, *and* Theisen, W. W.** Publicity campaigns for better school support. Yonkers-on-Hudson, N. Y., World book company, 1921. vii, 164 p. illus. 12°. (School efficiency monographs)

Selected bibliography: p. 151–58.

Presents the principles and procedures underlying the operation of successful school publicity campaigns in communities of every size. Also analyzes as definitely as possible the causes of failure of unsuccessful campaigns.

1613. **Bowman, E. L.** Graphic aids to school administration. American school board journal, 63: 29–31. December 1921.

This is the first of a series of articles.

1614. **Lindsay, E. E.** School support in Iowa. Educational administration and supervision, 7: 500–9, December 1921.

Partial findings of a study of school finance in Iowa bearing on taxation. Says that consolidated schools have a much lighter taxation burden than city schools.

1615. **Russell, William F.** The financial situation in Iowa schools. Elementary school journal, 22: 189–93, November 1921.

Says that compared with the data for last year, the percentage of local funds devoted to school purposes has increased, except in the case of the lower half of the larger cities.

1616. **Seligman, Edwin R. A.** Sources of increased revenues for education. Trained men (Scranton, Pa.) 1: 204–206, 209, December 1921.

An article by the McVickar professor of political economy, Columbia university.

SCHOOL MANAGEMENT.

1617. **Carter, Ralph E.** Teaching a study-habit. School review, 29: 695–706, 761–75, November, December 1921.

Discusses the direct method of teaching a study-habit. Summarizes the advantages of the direct and indirect methods of teaching a study-habit as contrasted with the incidental way which relies on chance rather than systematic training.

1618. **Freeman, Frank N.** Bases on which students can be classified. School review, 29: 735–45, December 1921.

Says that tests, school work, and teachers' judgments should be used conjointly in estimating a pupil's abilities, etc., supplemented with a study of the pupil's health and physical strength, as well as home conditions and general environment.

1619. **Garver, Francis Marion.** Misplacement of children in grades six, seven, eight in a large city school system. [Philadelphia, 1921] 57 p. incl. tables, diagrs. 8°.

1620. **Jackson, Nelson A.** Pupil government in secondary schools. Education, 42: 197–210, December 1921.

Study based on a questionnaire sent to teachers and school officials. Says the movement is spreading, but that the present generation will not accept the idea, except to experiment with it here and there.

SCHOOL BUILDINGS AND GROUNDS.

1621. **Munby, Alan E.** Improvements in secondary-school buildings. Journal of education and School world (London) 53: 703–6, 765–68, November, December 1921.

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1622 **Strayer, George D.** Report of the survey of the public school system of Baltimore, Maryland. Vol. 1. Survey of the public school buildings and school building program for Baltimore, Maryland, by George Drayton Strayer, N. L. Engelhardt [and] Edward S. Evenden. [Baltimore] 1921. 373 p. illus., maps, tables. 8°.

1623. **Whitney, Frank P.** Housing Cleveland's school children. [Cleveland] Division of publications, Cleveland board of education, 1921. 28 p. illus. 8°.

SCHOOL HYGIENE AND SANITATION.

1624. **Blanton, Smiley.** Speech defects in school children. Mental hygiene, 5: 820–27, October 1921.

Says that speech correction offers one of the best methods of approach to mental hygiene in the schools.

1625. **Bureau of educational experiments, New York.** Health education and the nutrition class; a report of the Bureau of educational experiments. Descriptive and educational sections by Jean Lee Hunt. Studies of height and weight and mental measurements, by Buford J. Johnson. Report on physical examinations 1919–20, by Edith M. Lincoln. New York, E. P. Dutton & company [1921] xv, 281 p. plates, charts. 12°.

1626. **Dukes, Clement.** School hygiene fifty years ago. London, Adlard & son & West Newman, ltd., 1921. 8 p. 8°.

Reprinted from School hygiene, London, November 1921.

Describes school hygiene conditions in England fifty years ago as compared with today.

1627. **Hoefer, Carolyn.** Methods of health instruction in the second and third grades. Elementary school journal, 22: 212–22, November 1921.

Presents a program for teaching health principles; and gives three methods for measuring the result of teaching health habits.

1628. **Hutt, C. W.** Hygiene for health visitors, school nurses & social workers. London. Methuen & co., [1921] 382 p. illus. 12°.

1629. **Macdonald, V. May.** Mental health of children. American journal of nursing, 22: 90–92, 174–76, November, December 1921.

Second paper of series discusses healthy and unhealthy habits. Third paper discusses the stimulus from success, support from confidence, etc.

1630. **Mitchell, Harold H.** The need for special health protection of employed adolescents. American journal of public health, 11: 973–78, November 1921.

Discusses health protection for pupils in continuation schools: for adolescents in general; and compares the condition of working children with non-workers.

1631. **New York. State library, *Albany.*** Books on health as related to the school child. 2d ed. rev. Albany, University of the state of New York, 1921. cover-title, 37 p. 8°. (Bibliography bulletin 69)

University of the state of New York bulletin . . . 729 . . . March 1, 1921.

1632. **Payne, E. George, *ed.*** Education in health; by members of the faculty, Harris teachers college, St. Louis. Chicago, New York, Lyons and Carnahan [1921] 253 p. illus. 12°.

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PHYSICAL TRAINING.

1633. **Dickey, C. W.** Physical education plants for public schools. Nation's health, 3: 629–30, November 1921.

Discusses physical education in the planning of the new public schools of Oakland, Calif. Illustrated.

1634. **Thaler, William H.** The relation of physical education to a national health program. Education, 42: 176–89, November 1921.

PLAY AND RECREATION.

1635. **Shreves, Rolland M.** Educational uses of the play motive. Education, 42: 211–18, December 1921.

Says that play needs careful direction and control, but not interference Emphasizes the value of play as an incentive to work, etc.

SOCIAL ASPECTS OF EDUCATION.

1636. **Carver, Thomas Nixon.** Principles of national economy. Boston, New York [etc.] Ginn and company [1921] 773 p. 8°.

Contains material on educated citizens as a national asset.

1637. **Ensign, Forest C., *and others*.** Parent and teacher. Iowa City, The University [1921] 79 p. 8°. (University of Iowa. Extension division bulletin no. 76.)

1638. **Marrs, J. Wyatt.** A high school social center; history and description of the social and recreation work of the La Salle-Peru township high school. La Salle, Peru, Oglesby, Illinois. [La Salle, 1921] 46 p. illus., ports. 8°.

1639. **Parsons, R. B.** A study of current practice as to parent-teacher associations. School review, 29: 688–94, November 1921.

A study based on data obtained from 50 different schools and school systems in 21 states; undertaken largely from the high-school viewpoint. Such associations can be made most valuable, if they are regarded as responsible agents in the direction of definite school and community activities.

1640. **Reavis, W. C.** Organized publicity in support of schools. Elementary school journal, 22: 223–27, November 1921.

Gives program that was carried out in 1918–21 in the city of Alton, Illinois.

1641. **Robinson, James Harvey.** The mind in the making; the relation of intelligence to social reform. New York and London, Harper & brothers [1921] 235 p. 8°.

1642. **Tigert, John James.** The fundamentals of success. Open road, 3: 11–12, November 1921.

Preceded on page 10 by a biographical sketch of Dr. Tigert, with portrait.

According to this article, the first great fundamental of success is ability, which includes health and mental vigor. Other fundamentals of success are initiative, perseverance, integrity, and education. The value of each of these elements is analyzed by the writer.

1643. **Williams, J. T.** Education in recent sociology. Education, 42: 145–58, 231–42, November, December 1921.

Sixth paper of series discusses the place of education in the sociology of Prof. Hayes, as outlined in his "Introduction to the study of sociology" and "Sociology and ethics." The final article gives a résumé of the series.

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CHILD WELFARE.

1644. **Bossard, James H. S., *ed.*** Child welfare. Philadelphia, American academy of political and social science, 1921. ix, 222 p. 8°. (Annals of the American academy of political and social science. vol. XCVIII, no. 187, November 1921)

Contains: The public school as a social agency—1. Arnold Gesell: Public school provision for exceptional children, p. 73–81. 2. Jane F. Culbert: The visiting teacher, p. 81–89. 3. Anna Beach Pratt: The relation of the teacher and the social worker, p. 90–96.

1645. **Hall, *Mrs.* Harriet T.** Physical welfare of crippled children in the public schools of Cleveland. American physical education review, 26: 362–67, November 1921.

Read before the Therapeutic section, American physical education association convention, July 1921.

1646. **Hyde, Robert R.** The boy in industry and leisure. London, G. Bell and sons, ltd., 1921. 281 p. 12°. [Social service library, ed. by C. R. Attlee. II]

"Bibliography": p. 272–81.

1647. **Servanté, F. A.** The psychology of the boy. 2d ed. London, Gay & Hancock, ltd., 1921. 86 p. 12°.

CONTENTS: The normal boy.—The bad boy.—The adolescent boy.

RELIGIOUS AND CHURCH EDUCATION.

1648. **Catholic educational association.** Report of the proceedings and addresses of the eighteenth annual meeting, Cincinnati, Ohio, June 27, 28, 29, 30, 1921. Columbus, Ohio, Catholic educational association. 1921. 664 p. 8°. (Catholic educational association bulletin. vol. xviii, no. 1. November, 1921)

Contains: 1. A. G. Schmidt: The philosophy of standardization, p. 68–83. Discussion, p. 83–88. 2. A. C. Fox: The trend of the colleges, p. 115–30. 3. K. C. Babcock: Variables in higher educational organization, p. 132–38. 4. G. F. Zook: The movement toward the standardization of colleges and universities, p. 139–48. 5. J. A. Dunney: Education for citizenship, p. 168–91. Discussion, p. 191–97. 6. J. J. Harbrecht: The forces and factors of control in parish school education, p. 221–36. 7. J. A. O'Brien: The pedagogical value of educational measurements, p. 245–65. 8. W. A. Kane: Cooperating with public officials, p. 286–89. Discussion by W. J. Lessard, p. 289–90. 9. George Johnson: A plan of teacher certification, p. 388–94. 10. Sister M. Catherine: The higher education of women under Catholic auspices, p. 429–40.

1649. **Athearn, Walter S.** The history, progress and present status of the survey of religious education by the American religious education survey department of the Interchurch world movement. [New York, 1920] 31 p. 8°.

1650. **Cather, Katherine Dunlap.** Story telling for teachers of beginners and primary children. New York, Printed for the Teacher training publishing association by the Caxton press [1921] 144 p. 16°.

A textbook in the standard course in teacher training, outlined and approved by the Sunday school council of evangelical denominations. Third year specialization series.

1651. **Hartshorne, Hugh.** Cooperative study of the religious life of children; a guide to parents, teachers, and investigators. Religious education, 16: 337–46, December 1921.

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1652. **Peters, Charles C.** Notes on methods of isolating scientifically the objectives of religious education. Pedagogical seminary, 28: 369–81, December 1921.

MANUAL AND VOCATIONAL TRAINING.

1653. **Western arts association.** Proceedings of the meetings held at Peoria, Ill., May 3–6, 1921. Twenty-seventh annual report, 1921. (Bulletin of the Western arts association, vol. 4, no. 4)

Contains: 1. C. A. Prosser: The mission of art education in the public schools. p. 32–39. 2. Hester A. Allyn: The content of a high school course in food, p. 46–50. 3. C. A. Bennett: Can the public schools prepare for occupations in the field of the fine arts? p. 66–71.

1654. **Bach, Richard F.** Industrial arts in the colleges. Educational review, 62: 317–23, November 1921.

Importance of emphasizing the history, philosophy, design, and economics of the industrial arts as related to a general education.

1655. **Chapman, J. Crosby.** Trade tests; the scientific measurement of trade proficiency. New York, H. Holt and company, 1921. ix, 435 p. illus. 12°.

1656. **Flinn, Alfred D.** The relation of the technical school to industrial research. Science, n. s. 54: 508–10, November 25, 1921.

1657. **Klenke, William W.** Art and education in wood-turning; a textbook and problem book for the use of students. Peoria, Ill., Manual arts press [1921] 110 p. illus. 8°.

1658. **Newark high school men's association.** Committee report on technical and vocational courses of study. [Newark, N. J.] 1921. 50 p. 8°.

1659. **Smith, K. G.** Establishing a state program of part-time education. Manual training magazine, 23: 107–10, October 1921.

The writer believes that the only way the smaller cities can make their instruction vocational is by supervised employment and instruction under shop conditions.

1660. **U. S. Federal board for vocational education.** Fifth annual report to Congress, 1921. Washington, Government printing office, 1921. 462 p. fold. charts, tables. 8°.

CONTENTS.—Section I. General survey of the work of the Board.—Section II. States relations services: (*a*) Cooperation with the states in the promotion of vocational education. (*b*) Vocational rehabilitation of persons disabled in industry or otherwise.—Section III. Vocational rehabilitation of disabled soldiers, sailors, and marines.

VOCATIONAL GUIDANCE.

1661. **Bureau of vocational information, *New York.*** Statistical work; a study of opportunities for women. . . New York city, The Bureau of vocational information [1921] 154p. incl. tables. 8°.

1662. **Cohen, I. David.** Vocational guidance in the continuation school. Educational foundations, 33: 3–4, 17–20, November 1; 5–7, 19–20, December 15, 1921.

1663. **Shidle, Norman G.** Finding your job, sound and practical business methods. New York, The Ronald press company, 1921. xii, 183p.

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1664. **Tanner, William R.** Occupational survey. Los Angeles, Cal., Los Angeles city school district, June 1921. 180p. 8°.

Report to the Los Angeles Board of education by the temporary occupational coordinator appointed to survey the conditions of work and wages in and about Los Angeles. The book includes bibliographies.

1665. **Wallenstein, Edna.** An attempt at vocational testing. Educational review, 62: 392–401, December 1921.

Describes an experiment conducted by the Board of education of New York city, the purpose of which is to give vocational tests to determine the vocational aptitudes of young people about to enter upon a high school or technical school course or about to enter the commercial and industrial fields in the capacity of workers.

1666. **Watts, Frank.** The construction of tests for the discovery of vocational fitness. Journal of applied psychology, 5: 240–52, September 1921.

Says that the successful construction of tests for the discovery of vocational fitness must largely depend upon an accurate psychological analysis of the various occupations followed by men and women.

WORKERS' EDUCATION.

1667. **Hewes, Amy.** New wine in old bottles. Survey, 47: 372–73, December 3, 1921.

Discusses the summer school for women workers in industry, established by Bryn Mawr college in July 1921.

1668. **Shafer, Robert.** Working people's education. North American review, 214: 786–94, December 1921.

Activities of the Bryn Mawr college summer school for women workers in industry. The control of the school was vested in a joint administrative committee composed of representatives of industrial workers, of the college, and of the alumnae.

1669. **Sweeney, Charles Patrick.** Adult working-class education in Great Britain and the United States; a study of recent developments. Washington, Government printing office, 1920. 101 p. 8°. (U. S. Department of labor. Bureau of labor statistics. Bulletin no. 271, miscellaneous series)

AGRICULTURE.

1670. **Allen, Frederick J.** Studies of occupations in agriculture, forestry, and animal industry. Prepared under the auspices of the Bureau of vocational guidance, Graduate school of education, Harvard university. Cambridge, Harvard university, 1921. x, 39 p. 8°.

1671. **Dadisman, Samuel H.** Methods of teaching vocational agriculture in secondary schools. Boston, R. G. Badger [1921] 142 p. front., plates. 12°.

1672. **Stevens, Neil E.** America's first agricultural school. Scientific monthly, 13: 531–40, December 1921.

Historical sketch of the Gardiner lyceum, Maine, founded by Robert H. Gardiner, in the year 1822.

HOME ECONOMICS.

1673. **U. S. Federal board for vocational education.** The home project, its use in home-making education. October, 1921. Issued by the Federal board for vocational education, Washington, D. C. Washington, Government printing office, 1921. 76 p. 8°. (Bulletin no. 71. Home economics series no. 6)

"Prepared by Miss Genevieve Fisher:" p. 4.

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COMMERCIAL EDUCATION.

1674. **Barton, J. W.** Smaller vs. larger units in learning to typewrite. Journal of educational psychology, 12: 465–74, November 1921.

1675. **Hanson, Charles C.** A business man's criticism of our public school system. Oklahoma school herald, 29: 1–4, December 1921.
Most of those who go into business for themselves fail to make good. The author believes that the fault lies with the school system not fitting the pupil for the vocation of business.

1676. **Reigner, Charles G.** Beginnings of the commercial school. Education, 42: 133–44. November 1921.
Historical sketch of commercial schools in the United States.

1677. **Tilden, C. V., *ed.*** Proceedings of a conference on highway traffic regulation held at Yale university under the auspices of the Highway and highway transport education committee, May 23, 1921. Washington, D. C., Pub. by the committee, 1921. 46 p. graphs. 8°.
Contains: Harriet E. Beard: Some results of safety education in grade schools, p. 23–27.

MEDICAL EDUCATION.

1678. **Clarke, Ethel P.** Schools of nursing as educational institutions. Trained nurse and hospital review, 67: 417–22, November 1921.

1679. **Holmes, S. J.** Education in relation to public health and medical practise. Science, n. s. 54: 503–8, November 25, 1921.
Urges a wider campaign of health education in the public schools.

1680. **Wilson, Robert, *jr.*** The educational preparation for medicine. Birmingham, Ala., 1921. 20 p. 12°.
Reprinted from the Southern medical journal, 14: 640–45, August 1921.
A paper read in the conference on medical education, Southern medical association, Louisville, Ky., November, 1920.

ENGINEERING EDUCATION.

1681. **Rayner, W. H.** The relative importance of topics in surveying instruction. Engineering education, 12: 57–85, October 1921.
A study to determine the relative value of topics which compose the subject-matter of elementary courses in surveying.

CIVIC EDUCATION.

1682. **McAndrew, William.** The belated revolution in the public schools. World's work, 43: 108–12, November 1921.
Progress in Americanism through the medium of the public schools; study of civics, etc.

1683. **McPheters, George A.** Citizenship dramatized; a bit of brightening for the study of civil government, by George A. McPheters, and Grace J. A. Cleaveland assisted by Stella W. Jones. New York, H. Holt and company [1921] vi, 188 p. 12°.

EDUCATION OF WOMEN.

1684. **Southern association of college women.** Proceedings of the sixteenth biennial meeting, Washington, D. C., March 29–April 2, 1921. 64 p. 8°. (Mrs. Charles Spencer, secretary, Edgewood, Birmingham, Ala.)

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1685. **Jennings, Elma F.** The work of dean of girls. Ohio educational monthly, 70: 238–43, October 1921.

An exposition of the duties of a dean of girls, with the main thought being that a dean should be a power and not a figurehead.

1686. **Whitney, Marian P.** The higher education of women in Italy. Educational review, 62: 374–81, December 1921.

Says that American women will have no difficulty in being received into any university courses in Italy, but that at present it is almost impossible to find adequately prepared Italian women who are ready to come to the United States to work in our colleges or universities either on scholarships or as teaching fellows.

NEGRO EDUCATION.

1687. **Dyson, Walter.** The founding of Howard university. Washington, D. C., Howard university press, 1921. 24 p. fold. plan. 8°. (Howard university. Studies in history. no. 1. June 1921.)

1688. **Lyford, Carrie A.** Home economics for Negro girls. Southern workman, 50: 513–18, November 1921.

Discusses the purpose of home-economics training; the planning for courses; preparation of teachers, etc.

EDUCATION OF DEAF.

1689. **American association for the hard of hearing.** Proceedings of the second annual meeting, Boston, June 8–10, 1920. Volta review, 23: 471–91, November 1921.

Gives brief extracts of the papers read, reports of committees, etc.

1690. **White, H. T.** Some things that are needed in teaching the deaf children of Illinois. American annals of the deaf, 66: 440–52, November 1921.

EXCEPTIONAL CHILDREN.

1691. **Goddard, Henry H.** Juvenile delinquency. New York, Dodd, Mead & company, 1921. vi, 120 p. 12°.

1692. **Horn, John L.** Caring for highly endowed pupils. School review, 29: 776–81, December 1921.

A study based on an experiment being tried in the school department of Oakland, Calif., by means of connectors and special adjustments of the curricula to the needs of school children. Says that more than 95 per cent of the pupils go on to high schools after the completion of the eighth grade under the stimulus of these efforts.

1693. **Wallin, J. E. W.** Suggested rules for special classes. Educational administration and supervision, 7: 447–57, November 1921.

These rules were prepared by the writer for the State superintendent of schools of Missouri, and adopted by him in their entirety.

EDUCATION EXTENSION.

1694. **Gorell, Ronald Gorell Barnes, *3d baron.*** Education and the army; an essay in reconstruction. London [etc.] H. Milford, Oxford University press, 1921. 291 [1] p. 8°.

Deals with the origin, development, and purpose of the adult education movement in the British army, which was organized and directed by the author of this book.

1695. **Harap, Henry.** A summer school program for city children. Educational administration and supervision, 7: 467–79, November 1921.

Work undertaken for the Hudson guild summer play school, New York City.

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1696. **Yeaxlee, Basil A.** Working out the Fisher act, the human aspect of the continuation schools. London, New York [etc.] H. Milford, Oxford university press, 1921. 96 p. 12°.
At head of title: The world of to-day.

LIBRARIES AND READING.

1697. **American library association.** Papers and proceedings of the 43d annual meeting. . . held at Swampscott, Mass., June 20–25, 1921. Chicago, Ill., American library association, 1921. [93]–260 p. 4°. (*Its* Bulletin, vol. 15, no. 4, July 1921)
Contains: 1. Alice S. Tyler: President's address—Some aspects of library progress, p. 95–100. 2. H. M. Towner: Libraries and the nation, p. 106–8. 3. C. F. D. Belden: The public libraries and the special libraries, p. 108–11. 4. C. W. Eliot: Adult education—a letter, p. 116–17.

1698. **Brown, Gilbert L.** The case against myths, folk-lore, and fairy stories as basal reading for children. Education, 42: 159–65, November 1921.
Questions the advisability of teaching myths, folk-lore, and fairy stories to children as a beginning in literature.

1699. **Smith, Elva S.** Some present-day problems of book selections. Public libraries, 26: 585–92, December 1921.
Considerations on the selection of books for young people, presented in the Children's librarians' section of the American library association, at Swampscott, Mass., June 1921.

1700. **Tandy, Jennette R.** College teaching of elementary bibliography. Educational review, 62: 382–91, December 1921.

BUREAU OF EDUCATION: RECENT PUBLICATIONS.

1701. Business training and commercial education; by Glen Levin Swiggett. Washington, 1921. 17 p. (Bulletin, 1921, no. 43.)
Advance sheets from the Biennial survey of education in the United States, 1918–1920.

1702. Developments in nursing education since 1918; by Isabel M. Stewart. Washington, 1921. 20 p. (Bulletin, 1921, no. 20)
Advance sheets from the Biennial survey of education in the United States, 1918–1920.

1703. Educational reconstruction in Belgium; by Walter A. Montgomery, Washington, 1921. 12 p. (Bulletin. 1921, no. 39)
Advance sheets from the Biennial survey of education in the United States, 1918–1920.

1704. Educational survey of Elizabeth City, North Carolina. Summary of conclusions and recommendations. Washington, 1921. 43 p. (Bulletin, 1921, no. 26)
A digest of the report of a survey of the public schools of Elizabeth City, N. C., made at the request of the Board of school trustees, under the direction of the United States Commissioner of education.

1705. The housing and equipment of kindergartens. Washington, 1921. 27 p. plates. (Bulletin, 1921, no. 13)
This bulletin was prepared with the co-operation of a committee of the International kindergarten union, Miss Grace L. Brown being chairman, and with the help of Miss Grace M. Janney.

1706. Monthly record of current educational publications. Index, February, 1920–January, 1921. Washington, 1921. 27 p. (Bulletin, 1921, no. 31)
An index to the 10 numbers of the record, February, 1920–January, 1921, equipping the series for use as an annual bibliography of education for 1920.

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1707. Opportunities for study at American graduate schools; by George F. Zook and Samuel P. Capen. Washington, 1921. 49 p. (Bulletin, 1921, no. 6.)

For the use of prospective foreign students and others desiring information regarding graduate study in America.

1708. Pharmaceutical education; by Wortley F. Rudd, in collaboration with P. F. Fackenthall. Washington, 1921. 15 p. (Bulletin, 1921, no. 11)

Advance sheets from the Biennial survey of education in the United States, 1918–1920.

1709. Present status of music instruction in colleges and high schools, 1919–20. Washington, 1921. 54 p. (Bulletin, 1921, no. 9.)

Report of a study made under the direction of the United States Bureau of education by a joint committee of the National education association, Music teachers' national association, and Music supervisors' national conference. Osbourne McConathy, chairman; Karl W. Gehrkens, Edward B. Birge.

1710. State laws and regulations governing teachers' certificates; by Katherine M. Cook. Washington, 1921. 244 p. (Bulletin, 1921, no. 22)

Contains a tabular digest of the provisions of State laws and regulations concerning teachers' certificates, with an introduction and bibliography.

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DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

BULLETIN, 1921, No. 53

STATISTICS OF STATE UNIVERSITIES AND STATE COLLEGES

FOR THE YEAR ENDED
JUNE 30, 1921

WASHINGTON
GOVERNMENT PRINTING OFFICE
1922

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STATISTICS OF STATE UNIVERSITIES AND STATE COLLEGES.

For the Year Ending June 30, 1921.

This annual bulletin, formerly prepared and published by the National Association of State Universities, has been published by the Bureau of Education for the past 13 years. The data given are taken from reports received from the offices of the presidents of the various institutions, and the figures printed are substantially as given in those reports.

Directory of State universities and State colleges.[1]

[Names in *italics* are institutions endowed by the Federal Government under the Morrill Acts.]

Location.	Name.	President.
Auburn, Ala	*Alabama Polytechnic Institute*	Spright Dowell, LL. D.
Montevallo, Ala	Alabama Technical Institute and College for Women.	T. W. Palmer.
University, Ala	University of Alabama	George H. Denny, LL. D.
Tucson, Ariz	*University of Arizona*	
Fayetteville, Ark	*University of Arkansas*	John C. Futrall, LL. D.
Berkeley, Calif	*University of California*	David P. Barrows, LL. D.
Boulder, Colo	University of Colorado	George Norlin, LL. D.
Fort Collins, Colo	*Colorado Agricultural College*	Chas. A. Lory, LL. D.
Golden, Colo	Colorado School of Mines	Victor C. Alderson, Sc. D.
Storrs, Conn	*Connecticut Agricultural College*	Charles L. Beach, B. S.
Newark, Del	*University of Delaware*	Walter Hullihen, Ph. D.
Gainesville, Fla	*University of Florida*	Albert A. Murphree, LL. D.
Tallahassee, Fla	Florida State College for Women	Edward Conradi, Ph. D.
Athens, Ga	*University of Georgia*	David C. Barrow, LL. D., chancellor.
Atlanta, Ga	Georgia School of Technology	
Augusta, Ga	Medical College of Georgia	Wm. H. Doughty, jr., M. D., dean.
Dahlonega, Ga	North Georgia Agricultural College	Gustavus R. Glenn, LL. D.
Honolulu, Hawaii	*University of Hawaii*	Arthur L. Dean, Ph. D.
Moscow, Idaho	*University of Idaho*	Alfred H. Upham, Ph. D.
Pocatello, Idaho	Idaho Technical Institute	Charles R. Frazier, B. L.
Urbana, Ill	*University of Illinois*	David Kinley, LL. D.
Bloomington, Ind	Indiana University	William L. Bryan, LL. D.
La Fayette, Ind	*Purdue University*	Henry W. Marshall, acting.
Ames, Iowa	*Iowa State College of Agriculture and Mechanic Arts.*	Raymond A. Pearson, LL. D.
Iowa City, Iowa	State University of Iowa	Walter A. Jessup, Ph. D.
Lawrence, Kans	University of Kansas	Ernest H. Lindley, Ph. D., chancellor.
Manhattan, Kans	*Kansas State Agricultural College*	William M. Jardine, LL. D.
Lexington, Ky	*University of Kentucky*	Frank L. McVey, LL. D.
Baton Rouge, La	*Louisiana State University and Agricultural and Mechanical College.*	Thomas D. Boyd, LL. D.
Orono, Me	*University of Maine*	
College Park, Md	*University of Maryland*	Alfred F. Woods, D. Agri.
Amherst, Mass	*Massachusetts Agricultural College*	Kenyon L. Butterfield, LL. D.
Cambridge, Mass	*Massachusetts Institute of Technology*	Elihu Thompson, Sc. D., acting
Lowell, Mass	Lowell Textile School	Charles H Eames, B. S.
Ann Arbor, Mich	University of Michigan	Marion Le Roy Burton, LL. D
East Lansing, Mich	*Michigan Agricultural College*	David Friday, A. B.
Houghton, Mich	Michigan College of Mines	Fred W. McNair, Sc. D.
Minneapolis, Minn	*University of Minnesota*	Lotus D. Coffman, Ph. D.
Agricultural College, Miss	*Mississippi Agricultural and Mechanical College.*	David C. Hull, M. Sc.
Columbus, Miss	Mississippi State College for Women	J. C. Fant, Ph. D.
University, Miss	University of Mississippi	Joseph N. Powers, chancellor.

[1] Corrected to Apr. 3, 1922, in so far as changes have been reported to this bureau.

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Directory of State universities and State colleges—Continued.

Location.	Name.	President.
Columbia, Mo.	*University of Missouri*	John C. Jones, LL. D.
Bozeman, Mont.	*Montana College of Agriculture and Mechanic Arts.*	Alfred Atkinson, D. Sc.
Butte, Mont.	Montana State School of Mines	George W. Craven, B. S.
Missoula, Mont.	University of Montana	Charles H. Clapp, Ph. D.
Lincoln, Nebr.	*University of Nebraska*	Samuel Avery, LL. D., chancellor.
Reno, Nev.	*University of Nevada*	Walter E. Clark, LL. D.
Durham, N. H.	*New Hampshire College of Agriculture and Mechanic Arts.*	Ralph D. Hetzel, LL. D.
New Brunswick, N. J.	*Rutgers College*	Wm. H. S. Demarest, LL. D.
Albuquerque, N. Mex.	University of New Mexico	David S. Hill, LL. D.
Socorro, N. Mex.	New Mexico School of Mines	Edgar H. Wells, B. S.
State College, N. Mex.	*New Mexico College of Agriculture and Mechanic Arts.*	Harry L. Kent, M. S.
Albany, N. Y.	New York State Library School	James I. Wyer, jr., director.
Ithaca, N. Y.	*Cornell University*	Livingston Farrand, LL. D.
Syracuse, N. Y.	New York State College of Forestry (at Syracuse University).	Franklin Moon, M. F.
Chapel Hill, N. C.	University of North Carolina	Harry W. Chase, LL. D.
Greensboro, N. C.	North Carolina College for Women	Julius I. Foust, LL. D.
West Raleigh, N. C.	*North Carolina College of Agriculture and Engineering.*	Wallace C. Riddick, LL. D.
Agricultural College, N. Dak.	*North Dakota Agricultural College*	Edward F. Keene, M. E., acting.
University, N. Dak.	University of North Dakota	Thomas F. Kane, LL. D.
Athens, Ohio	Ohio University	Elmer B. Bryan, LL. D.
Columbus, Ohio	*Ohio State University*	Wm. O. Thompson, LL. D.
Oxford, Ohio	Miama University	Raymond M. Hughes, M. S.
Chickasha, Okla.	Oklahoma College for Women	G. W. Austin, B. S.
Norman, Okla.	*University of Oklahoma*	Stratton D. Brooks, Ph. D.
Stillwater, Okla.	*Oklahoma Agricultural and Mechanical College.*	James B. Eskridge, Ph. D.
Corvallis, Oreg.	*Oregon State Agricultural College*	Wm. J. Kerr, Sc. D.
Eugene, Oreg.	University of Oregon	Prince L. Campbell, A. B.
State College, Pa.	*Pennsylvania State College*	John M. Thomas, LL. D.
San Juan, P. R.	*University of Porto Rico*	Paul G. Miller.
Kingston, R. I.	*Rhode Island State College*	Howard Edwards, LL. D.
Charleston, S. C.	Medical College of the State of South Carolina.	Robert Wilson, jr., M. D., dean.
Do.	The Citadel, the Military College of South Carolina.	O. J. Bond, A. M., supt.
Clemson College, S. C.	*Clemson Agricultural College*	Walter M. Riggs, LL. D.
Columbia, S. C.	University of South Carolina	Wm. S. Currell, LL. D.
Rock Hill, S. C.	Winthrop College	David B. Johnson, LL. D.
Brookings, S. Dak.	*South Dakota State College of Agriculture and Mechanic Arts.*	Willis E. Johnson, LL. D.
Rapid City, S. Dak.	South Dakota State School of Mines	Cleophas C. O'Harra, Ph. D.
Vermilion, S. Dak.	University of South Dakota	Robert L. Slagle, Ph. D.
Knoxville, Tenn.	*University of Tennessee*	Harcourt A. Morgan, LL. D.
Austin, Tex.	University of Texas	Robert E. Vinson, LL. D.
College Station, Tex.	*Agricultural and Mechanical College of Texas.*	Wm. B. Bizzell, D. C. L.
Denton, Tex.	College of Industrial Arts	F. M. Bralley, LL. D.
Logan, Utah	*Agricultural College of Utah*	Elmer G. Peterson, Ph. D.
Salt Lake City, Utah	University of Utah	George Thomas, Ph. D.
Burlington, Vt.	*University of Vermont and State Agricultural College.*	Guy W. Bailey, LL. D.
Blacksburg, Va.	*Virginia Polytechnic Institute*	Julian A. Burruss, A. M.
Charlottesville, Va.	University of Virginia	Edwin A. Alderman, LL. D.
Lexington, Va.	Virginia Military Institute	Edward W. Nichols, supt.
Richmond, Va.	Medical College of Virginia	Stuart McGuire, M. D.
Williamsburg, Va.	College of William and Mary	Julian A. C. Chandler, LL. D.
Pullman, Wash.	*State College of Washington*	Ernest O. Holland, Ph. D.
Seattle, Wash.	University of Washington	Henry Suzzallo, LL. D.
Morgantown, W. Va.	*West Virginia University*	Frank B. Trotter, LL. D.
Madison, Wis.	*University of Wisconsin*	Edward A. Birge, LL. D.
Laramie, Wyo.	*University of Wyoming*	Aven Nelson, Ph. D.

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TABLE 1.—*The teaching force in State universities and State colleges for the year 1920–21.*

Names of institutions.	Professors and instructors.			President's salary.	Maximum and minimum salaries.														House in addition to salary for—	
					Deans.		Professors.		Associate professors.		Assistant professors.		Instructors.		Assistants.		Tutors and others.			
	Men.	Women.	Total.		Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	President.	Professors.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Alabama Polytechnic Institute	102	2	104	$6,000	$4,000	$4,000	$3,600	$2,800	$2,700	$2,200	$2,400	$2,000	$2,000	$1,500	.....	.....	$450	$150	Yes.	0
Alabama Technical Institute and College for Women	6	33	39	5,000	2,000	.....	2,400	1,150	1,800	1,200	1,600	945	.....	.....	.....	.....	.....	.....	.....	.....
University of Alabama	82	3	85	7,300	5,000	4,000	3,600	3,000	3,000	2,400	2,400	1,800	1,800	1,500	$600	$300	.....	.....	Yes.	0
University of Arizona	64	27	91	10,500	5,000	3,200	3,800	2,600	3,000	2,100	2,800	1,800	2,100	1,500	1,200	900	.....	.....	Yes.	1
University of Arkansas	76	17	93	7,000	4,500	4,250	4,000	3,000	2,900	2,600	2,500	2,100	2,000	1,600	.....	.....	.....	.....	.....	.....
University of California	834	182	1,016	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
University of Colorado	196	32	228	7,500	4,400	3,500	3,800	2,500	2,950	2,400	2,500	1,000	1,800	1,200	900	300	300	150	Yes.	0
Colorado Agricultural College	54	22	76	7,500	3,900	.....	3,900	2,600	3,033	2,300	2,400	1,800	2,000	1,200	.....	.....	.....	.....	Yes.	0
Colorado School of Mines	23	0	23	6,600	.....	.....	3,800	2,300	2,300	2,000	2,700	1,800	1,500	1,500	900	900	.....	.....	Yes.	0
Connecticut Agricultural College	50	16	66	6,000	4,250	3,250	4,250	3,250	3,000	.....	3,250	2,500	3,000	2,000	1,500	750	.....	.....	No..	0
University of Delaware	45	12	57	7,000	4,400	.....	3,600	2,500	2,750	2,400	2,500	2,000	2,500	1,400	1,300	.....	900	310	Yes.	0
University of Florida	71	0	71	5,000	2,700	2,500	2,400	2,100	.....	.....	2,100	1,800	1,800	1,700	450	.....	.....	.....	.....	.....
Florida State College for Women	12	29	41	5,000	2,700	2,400	2,500	2,200	.....	.....	1,700	1,600	1,600	1,200	.....	.....	.....	.....	.....	.....
University of Georgia	80	6	86	6,000	1,000	200	3,600	2,600	2,100	1,800	[1] 1,700	[1] 1,500	1,200	1,200	300	100	1,000	600	Yes.	0
Georgia School of Technology	108	0	108	7,500	4,000	3,800	3,600	3,300	2,850	2,550	2,500	2,000	1,800	1,650	.....	.....	850	650	Yes.	1
Medical College of Georgia	45	0	45	.....	.....	.....	4,000	.....	.....	.....	3,200	2,000	1,800	1,600	300	.....	.....	.....	.....	.....
North Georgia Agricultural College	13	2	15	2,500	2,100	.....	2,000	.....	1,600	.....	.....	.....	800	.....	.....	.....	.....	.....	No..	0
University of Hawaii	24	5	29	6,600	4,200	.....	4,200	2,700	.....	.....	3,000	2,100	2,520	1,500	.....	.....	500	.....	No..	0
University of Idaho	93	17	110	7,500	4,700	3,200	3,700	2,700	2,800	2,400	2,300	2,000	1,900	1,600	.....	.....	.....	.....	.....	.....
Idaho Technical Institute	21	12	33	5,000	3,200	2,650	2,500	2,200	.....	.....	2,000	1,700	1,650	1,400	.....	.....	.....	.....	.....	.....
University of Illinois	660	120	780	12,000	8,500	4,000	6,000	3,000	3,900	2,700	[2] 3,500	[2] 1,800	2,250	1,200	2,100	1,200	.....	.....	Yes.	0
Indiana University	184	35	219	8,500	5,500	3,300	4,900	2,800	4,000	2,600	3,500	2,000	2,500	1,000	.....	.....	.....	.....	.....	.....
Purdue University (Ind.)	220	21	241	.....	6,000	3,000	3,600	1,800	3,000	2,200	3,500	1,800	2,000	1,600	1,400	600	.....	.....	.....	2
Iowa State College of Agriculture and Mechanic Arts	396	116	507	10,000	5,500	3,750	6,000	300	4,000	1,500	3,275	1,600	2,500	200	1,500	150	.....	.....	Yes.	7
State University of Iowa	264	74	338	10,000	6,500	2,500	6,500	2,750	4,000	2,750	3,500	1,750	3,000	1,200	2,000	1,200	.....	.....	Yes.	0
University of Kansas	250	65	315	10,000	5,750	3,600	4,500	2,900	2,800	2,400	2,300	1,800	1,700	1,400	1,200	600	.....	.....	Yes.	0

[1] For adjunct professors.

[2] Maximum and minimum salaries for adjunct professors, $3,000 and $1,700.

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TABLE 1.—*The teaching force in State universities and State colleges for the year 1920–21*—Continued.

Names of institutions.	Professors and instructors.			President's salary.	Maximum and minimum salaries.														House in addition to salary for—	
					Deans.		Professors.		Associate professors.		Assistant professors.		Instructors.		Assistants.		Tutors and others.			
	Men.	Women.	Total.		Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	President.	Professors.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Kansas State Agricultural College	165	70	235	$8,000	$5,400	$3,300	$5,000	$2,500	$3,650	$2,000	$3,000	$1,600	$2,600	$900	$2,000	$600	$500	$500	.....	.....
University of Kentucky	121	23	144	10,000	6,500	4,000	3,300	1,500	3,000	2,400	2,500	1,400	2,400	1,100	.....	.....	.....	.....	Yes.	0
Louisiana State University and Agricultural and Mechanical College	64	21	85	7,500	5,500	4,160	4,000	3,128	3,420	2,400	2,520	1,800	2,500	600	360	270	.....	.....	Yes.	0
University of Maine	102	16	118	6,000	4,400	4,400	3,500	2,600	2,700	2,500	2,500	1,900	1,700	1,500	.....	.....	.....	.....	Yes.	0
University of Maryland	170	7	177	10,000	4,000	3,200	3,500	3,100	3,000	2,600	2,500	2,000	1,800	1,600	900	.....	.....	.....	.....	.....
Massachusetts Agricultural College	79	4	83	7,500	5,000	4,200	4,200	3,000	3,180	2,820	2,820	2,000	1,980	1,320	.....	.....	.....	.....	Yes.	0
Massachusetts Institute of Technology	305	6	311	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lowell Textile School (Mass.)	31	1	32	4,500	.....	.....	4,000	3,060	.....	.....	3,000	2,280	1,980	1,200	500	350	.....	.....	No..	0
University of Michigan	536	7	543	18,000	10,000	4,500	10,000	2,000	3,900	3,500	4,500	2,500	2,500	1,500	1,000	250	.....	.....	Yes.	0
Michigan Agricultural College	171	27	198	8,000	6,000	3,800	5,500	3,500	4,200	2,800	3,600	2,400	2,900	1,200	.....	.....	.....	.....	.....	7
Michigan College of Mines	24	0	24	5,000	.....	.....	4,000	4,000	3,100	3,000	2,800	2,400	2,700	1,800	1,800	1,200	.....	.....	Yes.	0
University of Minnesota	712	125	837	12,000	5,594	.....	3,845	.....	3,034	.....	2,379	.....	1,822	.....	982	.....	.....	.....	Yes.	0
Mississippi Agricultural and Mechanical College	114	10	124	6,000	4,500	3,500	3,300	2,500	2,400	1,800	[3] 1,800	[3] 1,500	.....	.....	.....	.....	.....	.....	Yes.	0
Mississippi State College for Women	5	64	69	6,000	3,000	.....	3,000	2,000	.....	.....	2,100	1,800	1,500	1,000	.....	.....	.....	.....	Yes.	0
University of Mississippi	36	2	38	6,000	3,600	3,600	3,600	2,500	3,600	2,750	2,000	1,800	.....	.....	.....	.....	250	150	Yes.	0
University of Missouri [4]	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Montana College of Agriculture and Mechanic Arts	64	22	86	6,000	4,500	2,700	3,600	2,500	.....	.....	2,400	2,100	2,000	1,500	1,600	1,200	.....	.....	No..	2
Montana State School of Mines	11	0	11	4,500	.....	.....	4,000	3,000	3,000	2,900	2,800	1,500	600	.....	.....	.....	.....	.....	No..	1
University of Montana	50	17	67	6,000	4,000	2,400	3,300	2,760	2,760	2,500	2,400	1,800	2,800	1,800	.....	.....	.....	.....	No..	0
University of Nebraska	328	74	402	8,400	6,000	2,500	5,000	2,200	3,000	2,000	3,000	1,500	2,700	1,200	2,400	720	.....	.....	Yes.	0
University of Nevada	57	12	69	12,000	4,200	3,600	3,600	3,000	2,750	2,250	2,500	2,000	2,250	1,800	1,000	200	.....	.....	Yes.	0
New Hampshire College of Agriculture and Mechanic Arts	65	11	76	7,000	3,700	3,000	3,450	2,600	2,700	2,100	2,700	2,000	2,300	1,200	900	900	.....	.....	Yes.	0
Rutgers College (N. J.)	96	9	105	6,000	1,200	600	5,000	3,000	3,300	2,600	2,500	1,500	2,500	1,500	.....	.....	.....	.....	Yes.	0
University of New Mexico	24	10	34	5,000	2,800	2,800	2,800	2,150	2,600	2,225	2,500	2,050	1,800	1,400	.....	.....	.....	.....	No..	0
New Mexico School of Mines	8	0	8	3,750	.....	.....	3,000	2,300	.....	.....	1,800	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Mexico College of Agriculture and Mechanic Arts	38	9	47	6,000	3,000	2,700	2,460	1,620	.....	.....	2,040	1,620	1,665	1,350	.....	.....	.....	.....	Yes.	0

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New York State Library School	4	8	12																	
Cornell University (N. Y.)	839	66	905	12,000	7,500	1,000	6,250	3,500			3,150	2,500	2,100	1,000	750	175			Yes.	1
New York State College of Forestry (at Syracuse University)	30	0	30	6,000			5,000	3,000			2,750	2,000	1,900	1,500						
University of North Carolina	122	0	122	6,000	4,750	3,500	4,500	3,750	3,600	3,000	2,750	2,250	2,000	1,500	500	500			Yes.	0
North Carolina College for Women	17	59	76	6,000	4,000		3,800	1,800											No.	0
North Carolina College of Agriculture and Engineering	83	0	83	6,000	4,500	4,000	3,600	3,000	2,750	2,500	2,500	2,000	2,000	1,600						
North Dakota Agricultural College	59	19	78	7,000	4,000	3,300	3,500	2,800	3,000	2,500	2,700	1,800	1,800	1,500					No.	0
University of North Dakota	65	23	88	6,000	4,000	4,000	3,500	3,000	3,000	2,500	2,500	2,000	2,000	1,500	1,000	125			Yes.	0
Ohio University	50	29	79	9,000	4,500	3,500	3,000	2,600	2,500	1,800	2,500	1,700	2,000	850	600	100			Yes.	0
Ohio State University	492	77	569	10,000	6,000	4,000	6,000	3,000	2,750	2,500	3,500	2,500	2,250	1,500	1,200	500			Yes.	0
Miami University (Ohio)	56	27	83	7,500	4,500	1,800	3,600	2,700	3,000	1,600	1,750	1,500	1,700	100	500	75				
Oklahoma College for Women	2	38	40	4,000	2,000		2,250	2,000	2,000	1,800	1,800		1,800	1,500					Yes.	0
University of Oklahoma	157	32	189	10,000	6,000	4,200	4,200	3,200	3,400	2,800	2,600	2,200	2,000	1,600	1,500	1,200			Yes.	0
Oklahoma Agricultural and Mechanical College	87	29	116	10,000	4,500	3,150	3,550	2,400	3,050	2,000	3,050	1,350	2,500	1,350					No.	0
Oregon State Agricultural College	200	61	261	10,000	4,500	4,000	4,500	2,800	3,500	2,200	3,200	2,000	2,700	1,400	675	328			No.	1
University of Oregon	86	37	123	8,000	5,500	4,200	4,500	3,500	3,400	2,750	2,700	2,000	1,900	1,200					Yes.	0
Pennsylvania State College	274	27	301	12,000	6,500	3,000	5,000	1,800	3,000	1,500	2,800	1,500	2,100	1,000	1,500	750			Yes.	3
University of Porto Rico	57	43	100		4,200		3,105	2,070			2,000	1,800	1,800	1,125	675	225			Yes.	2
Rhode Island State College	31	9	40	4,500	3,000		2,900	2,200			2,400	2,000	2,000	1,500					Yes.	0
Medical College of the State of South Carolina	55	0	55	3,000			4,000	3,000			2,500	2,000	2,000	2,000	1,200	600			No.	0
The Citadel, the Military College of South Carolina	20	0	20	5,000			3,125	1,200	2,500	2,500	1,875	1,875					3,125	1,000	Yes.	
Clemson Agricultural College (S. C.)	68	2	70	6,000	4,500	3,500	3,250	2,500	2,400	2,200	2,200	1,800	1,800	1,400			1,200	1,000		
University of South Carolina	38	0	38	5,000	3,500	3,000	3,000	2,500	2,250	2,250	[1] 1,500	[1] 1,500	2,500	1,200			600	300	Yes.	24
Winthrop College (S. C.)	14	73	87	5,000	3,300	2,000	3,000	2,000					1,750	1,200					Yes.	12
South Dakota State College of Agriculture and Mechanic Arts	78	21	99	6,000	4,500	2,200	5,000	2,400	2,750	2,500	[1] 2,600	[1] 1,500	800	750					Yes.	0
South Dakota State School of Mines	12	1	13	5,700			3,600	2,700	2,400	2,400	2,200	2,200	2,200	2,200						
University of South Dakota	47	16	63	7,500	4,500	4,000	3,600	2,100	3,200	2,100	3,000	2,200	2,100	1,500	1,300	600			No.	0
University of Tennessee	174	25	199	10,900			3,250		3,000		2,400		1,600		1,000		144		Yes.	0
University of Texas	300	37	337	7,500	6,000	4,000	5,000	3,250	3,750	2,500	[3] 3,000	[2] 2,000	2,400	1,600			1,400	1,200	Yes.	0
Agricultural and Mechanical College of Texas	143	0	143	7,500	4,500		3,600	2,750	2,750	2,400	2,250	1,920	2,100	1,600					Yes.	13
College of Industrial Arts (Tex.)	20	84	104	6,500	4,000	2,500	3,500	2,500	2,500	1,800	2,100	1,500	2,000	1,500					Yes.	0
Agricultural College of Utah [4]																				
University of Utah	109	30	139	7,500	3,600	3,200	3,000	2,420	2,300	1,000	2,100	1,600	1,500	400			970	250		
University of Vermont and State Agricultural College	119	14	133	7,000	4,000		4,000		2,800		2,400	1,800	1,800	1,200					Yes.	0
Virginia Polytechnic Institute	89	0	89	7,500	3,600		3,200	2,600	2,500	2,100	2,000	1,500	1,500	1,000	900	400	300	300	Yes.	25
University of Virginia	146	0	146	10,000	1,875	250	4,500	4,000	4,000	2,500	2,500	1,800	1,800	500	500	100			Yes.	0
Virginia Military Institute	32	0	32	6,000															Yes.	25
College of William and Mary (Va.)	26	5	31	6,000	3,300		3,000	2,400	2,400	2,100	1,000	750	200	200					Yes.	0
State College of Washington	150	42	192	8,000	5,000	2,900	3,600	2,500	3,200	2,100	2,900	1,550	2,400	1,100	2,100	1,200			Yes.	1
University of Washington	286	39	325	12,000	5,400	4,400	4,400	3,000	3,500	2,500	3,250	2,200	2,250	1,200	1,500	900	2,000	1,200	Yes.	0
West Virginia University [4]																				
University of Wisconsin	597	134	731	10,000	7,500	3,750	7,000	3,150	5,000	2,500	4,000	2,000	3,000	1,200	1,800	375	600	250	Yes.	6
University of Wyoming	43	35	87	5,040	3,600	3,360	3,180	2,400	2,700	2,400	2,600	1,800	1,740	500					Yes.	0

[1] For adjunct professors.

[3] Maximum and minimum salaries for adjunct professors, $1,320.

[4] No report.

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TABLE 2.—*Student enrollment in State universities and State colleges for the year 1920–21.*

Names of institutions.	Regular term enrollment.													Enrolled in 1920 summer school.		Enrolled in other short courses.	Enrolled in professional departments.								In military drill.
	Preparatory department.[1]		Department of arts and sciences.		Graduate department.		Professional departments.[2]		All other students.[3]		Total (excluding duplicates).						Law.	Medicine.	Dentistry.	Pharmacy.	Veterinary medicine.	Agriculture.	Engineering.	Home economics.	All others.	
	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Total.	Men.	Women.	Enrolled									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Alabama Polytechnic Institute	.....	.....	62	11	4	0	1,056	7	55	0	1,177	18	1,195	312	192	.....	.....	.....	.....	50	55	333	527	.....	230	678
Alabama Technical Institute and College for Women	0	142	.....	.....	0	0	0	300	0	43	0	485	485	0	351	.....	.....	.....	.....	.....	.....	50	.....	247	183	.....
University of Alabama	260	0	401	251	5	5	917	64	14	4	1,337	324	1,661	233	443	.....	140	25	.....	.....	.....	.....	182	54	.....	437
University of Arizona	.....	.....	329	379	25	18	321	72	120	116	716	455	1,171	51	128	367	36	.....	.....	.....	.....	89	199	69	.....	140
University of Arkansas	92	0	212	94	4	3	248	232	79	32	635	361	996	193	315	.....	.....	22	.....	.....	.....	62	152	57	187	244
University of California	598	3	2,684	4,162	460	568	3,848	1,778	205	139	7,795	6,650	14,445	1,334	3,894	366	378	259	328	119	.....	586	1,321	229	2,406	1,610
University of Colorado	.....	.....	610	660	104	170	820	6	12	10	1,546	846	2,392	805	1,598	.....	95	98	.....	39	.....	272	608	.....	.....	.....
Colorado Agricultural College	315	65	4	7	.....	.....	514	188	22	36	855	296	1,151	71	138	.....	.....	.....	.....	.....	92	272	151	183	4	220
Colorado School of Mines	.....	.....	.....	.....	.....	.....	471	0	.....	.....	471	0	471	120	0	.....	.....	.....	.....	.....	.....	.....	471	.....	.....	147
Connecticut Agricultural College	.....	.....	33	7	4	0	165	57	34	8	236	72	318	.....	.....	85	.....	.....	.....	.....	.....	132	34	56	.....	135
University of Delaware	185	0	113	83	.....	.....	189	44	.....	.....	487	177	664	9	158	.....	.....	.....	.....	.....	.....	34	155	37	57	222
University of Florida	180	.....	226	0	3	0	482	0	.....	.....	711	0	711	236	508	.....	115	.....	.....	.....	.....	129	160	.....	78	347
Florida State College for Women	.....	0	0	296	0	2	0	263	0	75	0	636	636	33	390	.....	.....	.....	.....	.....	.....	.....	.....	63	200	.....
University of Georgia	252	0	231	46	34	9	767	33	17	0	1,268	88	1,356	266	800	633	139	.....	.....	32	21	250	45	31	249	607
Georgia School of Technology	500	0	.....	.....	.....	.....	1,913	0	.....	.....	2,413	0	2,413	273	0	.....	.....	.....	.....	.....	.....	.....	1,257	.....	656	1,200
Medical College of Georgia	.....	.....	.....	.....	.....	.....	83	0	.....	.....	83	0	83	.....	.....	.....	.....	83	.....	.....	.....	.....	.....	.....	.....	.....
North Georgia Agricultural College	.....	.....	52	3	.....	.....	110	7	.....	.....	162	10	172	.....	.....	.....	.....	.....	.....	.....	.....	40	32	6	39	142
University of Hawaii	.....	.....	41	21	5	4	87	6	30	50	159	75	234	.....	.....	57	.....	.....	.....	.....	.....	7	83	3	.....	91
University of Idaho	.....	.....	231	244	11	4	427	73	6	40	645	334	979	78	63	90	49	.....	.....	.....	.....	213	112	49	76	290
Idaho Technical Institute	115	88	83	84	.....	.....	35	83	.....	.....	233	255	488	(341)		.....	.....	.....	.....	27	.....	.....	.....	.....	118	.....
University of Illinois	.....	.....	844	1,088	299	91	5,537	838	42	0	6,722	2,017	8,739	891	490	1,269	128	313	229	208	.....	966	1,774	354	2,439	2,476
Indiana University	.....	.....	1,609	1,693	128	83	658	745	.....	.....	2,127	1,787	3,914	634	845	.....	135	266	.....	.....	.....	.....	.....	293	709	.....
Purdue University (Ind.)	.....	.....	77	334	31	8	2,394	13	83	14	2,585	369	2,954	19	21	90	.....	.....	.....	72	.....	548	1,787	.....	.....	1,427
Iowa State College of Agriculture and Mechanic Arts	694	35	.....	.....	152	52	2,644	1,024	.....	.....	3,490	1,111	4,601	695	393	169	.....	.....	.....	.....	96	1,076	1,158	756	582	1,311
State University of Iowa	100	86	1,778	1,726	329	265	1,273	300	1	36	3,155	2,190	5,345	643	777	.....	168	289	305	73	.....	.....	415	.....	323	743

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University of Kansas			1,198	950	60	58	1,041	202	86	112	2,349	1,331	3,680	449	475		208	134		79			636		191	190
Kansas State Agricultural College	240	40	126	115	27	15	1,283	597	165	105	1,791	872	2,663	259	345	422					72	483	560	485	280	811
University of Kentucky			296	292	17	7	537	110	55	38	905	447	1,352	171	145	183	82					142	323	100		470
Louisiana State University and Agricultural and Mechanical College	89	67	191	156	23	5	543	58	24	12	870	298	1,167	253	332	27	49					136	354	30	32	411
University of Maine			248	168	19	7	724	75	30	0	1,002	335	1,337	78	51							116	544	65	74	532
University of Maryland	29	0	115	17	22	2	1,279	51			1,445	70	1,515	46	162		491	265	160	84		164	106	21	30	288
Massachusetts Agricultural College	255	22					428	30	41	7	724	59	783	36	150	90						458				225
Massachusetts Institute of Technology			108	8	164	12	3,078	18	48	0	3,396	38	3,434	(1,283)									3,096			1,121
Lowell Textile School (Mass.)				5	0		171	0	120	4	295	4	300										171			
University of Michigan			3,569	2,003	340	100	3,654	79			7,468	2,143	9,611	1,559	635		362	602	455	101			2,085		178	
Michigan Agricultural College	105	0			11	0	1,096	378			1,222	378	1,600	207	67	510					25	516	528	372	38	512
Michigan School of Mines							269	0			269	0	269										269			
University of Minnesota	1,442	846	2,269	1,701	550	139	3,016	941	183	302	7,453	3,829	11,282	1,178	847	810	264	411	399	115		423	1,390	334	727	
Mississippi Agricultural and Mechanical College	547	0	75	0	23	0	1,056	0			1,603	0	1,603	198	484							603	260		203	718
Mississippi State College for Women			0	865					0	24	0	889	889													
University of Mississippi			327	77			170	5	17	39	500	121	621	49	251		74	48		53			49			
University of Missouri [4]																										
Montana College of Agriculture and Mechanic Arts	169	8	39	30			380	189			588	227	815	84	56							138	215	94		
Montana State College of Mines							138	5			138	5	143										143			
University of Montana			161	310	12	25	387	108	17	45	578	488	1,066	83	296		49			30					416	200
University of Nebraska	550	570	1,017	1,913	164	155	2,056	784			3,777	2,986	6,763	325	771		258	228	139	77		272	548	216	1,104	978
University of Nevada			141	165	2	9	212	41	34	27	384	234	618	9	103	8						40	172	21	20	170
New Hampshire College of Agriculture and Mechanic Arts			240	138			442	71			682	209	891									180	268	65		240
Rutgers College (N. J.)	92	0	298	121	29	1	392	48	5	0	804	180	984	119	440	149						101	291	48		386
University of New Mexico			82	99	3	1	101	108	16	8	155	108	263										54	24	185	
New Mexico School of Mines	12	0					83	1	19	1	114	2	116	17	0								79		5	
New Mexico College of Agriculture and Mechanic Arts	81	25	7	5	2	3	95	44	21	6	314	80	394									25	49	16	49	172
New York State Library School							7	25			7	25	32	2	23										32	
Cornell University (N. Y.)			1,203	642	371	69	3,020	466			4,594	1,177	5,771	820	1,808	326	119	279			81	1,204	1,686		117	1,829
New York State College of Forestry (at Syracuse University)							279	0	5	0	284	0	284			12									279	
University of North Carolina			801	44	58	13	909	5			1,468	62	1,530	319	828		147	72		68			175		185	131
North Carolina College for Women			0	706					0	65	0	771	771	0	667	13										
North Carolina College of Agriculture and Engineering	297	0			39	0	726	0	7	0	1,069	0	1,069	73	442	55						199	527			633
North Dakota Agricultural College	347	119	54	32	2	0	206	86	5	6	567	237	804	132	170	202				48	5	75	56	66	42	238
University of North Dakota	59	54	339	215	5	2	227	311			630	582	1,212	80	166	246		28	39				150		312	206
Ohio University	82	106	458	265			54	437			594	808	1,402	354	1,809										491	

[1] Including secondary schools, also noncollegiate rehabilitation students.
[2] Includes students in columns 18 to 26, inclusive.
[3] Includes students in music, art, oratory, business, etc., unless they are enrolled in four-year courses leading to a collegiate degree.
[4] No report.

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TABLE 2.—*Student enrollment in State universities and State colleges for the year 1920–21*—Continued.

Names of institutions.	Regular term enrollment.													Enrolled in 1920 summer school.		Enrolled in other short courses.	Enrolled in professional departments.									In military drill.
	Preparatory department.		Department of arts and sciences.		Graduate department.		Professional departments.		All other students.		Total (excluding duplicates).						Law.	Medicine.	Dentistry.	Pharmacy.	Veterinary medicine.	Agriculture.	Engineering.	Home economics.	All others.	
	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Total.	Men.	Women.											
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Ohio State University	.....	.....	1,877	1,023	183	86	3,630	963	.....	.....	5,580	2,004	7,584	890	519	88	172	229	210	145	108	965	1,416	310	1,035	2,216
Miami University (Ohio)	.....	.....	428	153	.....	.....	45	436	.....	.....	473	589	1,062	169	805	.....	.....	.....	.....	.....	.....	.....	.....	.....	481	.....
Oklahoma College for Women	0	185	0	196	.....	.....	0	109	0	4	0	381	381	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	60	49	.....
University of Oklahoma	.....	.....	926	662	36	34	1,210	282	171	161	1,861	1,104	2,965	442	887	.....	217	103	.....	141	.....	.....	751	.....	280	532
Oklahoma Agricultural and Mechanical College	349	111	24	36	10	11	550	253	97	68	1,030	479	1,509	122	239	7	.....	.....	.....	.....	4	144	196	165	294	364
Oregon State Agricultural College	373	48	.....	.....	11	2	2,550	1,104	.....	.....	2,923	1,152	4,075	179	310	1,027	.....	.....	.....	190	.....	900	890	589	1,388	1,127
University of Oregon	.....	.....	993	858	35	34	606	312	.....	.....	1,132	891	2,023	98	158	.....	77	132	.....	.....	.....	.....	.....	28	681	337
Pennsylvania State College	.....	.....	262	91	105	12	2,520	185	68	11	2,955	299	3,254	305	1,035	104	.....	.....	.....	.....	.....	822	1,434	138	311	1,484
University of Porto Rico	317	351	50	24	.....	.....	165	125	7	2	537	502	1,039	237	803	.....	57	.....	.....	46	.....	31	46	.....	110	404
Rhode Island State College	.....	.....	50	4	.....	.....	231	65	6	0	287	69	356	.....	.....	.....	.....	.....	.....	.....	.....	49	182	58	7	186
Medical College of the State of South Carolina	.....	.....	.....	.....	1	0	144	10	1	2	144	10	154	.....	.....	.....	.....	84	.....	70	.....	.....	.....	.....	.....	.....
The Citadel, the Military College of South Carolina	.....	.....	297	0	.....	.....	.....	.....	.....	.....	297	0	297	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	297
Clemson Agricultural College (S. C.)	.....	.....	.....	.....	.....	.....	487	0	32	0	847	0	847	229	5	.....	.....	.....	.....	.....	.....	386	461	.....	.....	726
University of South Carolina	.....	.....	289	57	23	12	254	31	65	18	520	90	610	31	36	.....	106	.....	.....	.....	.....	.....	44	.....	135	.....
Winthrop College (S. C.)	.....	.....	0	45	0	3	0	1,064	0	193	0	1,064	1,064	123	1,325	37	.....	.....	.....	.....	.....	.....	.....	842	222	.....
South Dakota State College of Agriculture and Mechanic Arts	388	61	47	41	10	0	218	104	13	51	676	255	931	56	103	.....	.....	.....	.....	47	.....	66	94	65	46	103
South Dakota State School of Mines	20	0	.....	.....	.....	.....	119	7	.....	.....	139	7	146	.....	.....	.....	.....	.....	.....	.....	.....	.....	126	.....	.....	.....
University of South Dakota	31	29	174	249	5	14	231	66	5	8	546	366	912	37	77	.....	89	77	.....	.....	.....	.....	60	.....	71	168
University of Tennessee	.....	.....	208	223	8	0	648	140	31	63	836	342	1,178	.....	.....	171	71	60	58	49	.....	177	196	140	45	247
University of Texas	.....	.....	1,548	1,465	57	60	1,354	624	.....	.....	2,959	2,149	5,108	747	882	.....	337	218	.....	77	.....	.....	746	.....	600	.....
Agricultural and Mechanical College of Texas	190	0	.....	.....	23	0	1,635	0	.....	.....	1,848	0	1,848	1,310	0	.....	.....	.....	.....	.....	12	746	900	.....	70	1,900
College of Industrial Arts (Texas)	0	102	0	240	.....	.....	0	624	0	353	0	1,319	1,319	0	566	.....	.....	.....	.....	.....	.....	.....	.....	480	174	.....
Agricultural College of Utah	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

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University of Utah	88	38	157	353	35	141	1,061	445	.....	.....	1,311	852	2,163	240	664	.....	66	264	.....	.....	.....	462	.....	714	151					
University of Vermont and State Agricultural College	.....	.....	269	216	1	2	241	75	11	18	622	314	936	35	407	52	103	.....	.....	.....	64	178	74	.....	300					
Virginia Polytechnic Institute	.....	.....	27	0	14	0	732	0	.....	.....	793	0	793	310	0	53	.....	.....	.....	.....	265	501	.....	.....	640					
University of Virginia	.....	.....	969	0	40	10	671	13	.....	1,700	2,384	23	1,723	451	1,365	.....	310	130	.....	.....	.....	227	.....	17	.....					
Virginia Military Institute	.....	.....	579	0	.....	.....	136	0	.....	.....	579	0	579	.....	.....	.....	.....	.....	.....	.....	.....	136	.....	.....	579					
Medical College of Virginia	.....	.....	.....	.....	.....	.....	394	27	.....	.....	394	27	421	.....	.....	.....	.....	174	130	117	.....	.....	.....	.....	.....					
College of William and Mary (Va.)	.....	.....	264	191	.....	.....	.....	.....	.....	.....	264	191	475	60	123	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....					
State College of Washington	259	75	229	310	106	45	338	477	.....	.....	1,421	840	2,261	174	213	207	.....	.....	85	26	328	356	143	312	585					
University of Washington	.....	.....	728	1,315	105	104	2,558	858	155	.....	3,844	2,498	5,882	550	1,114	.....	136	.....	131	.....	.....	927	.....	1,202	282					
West Virginia University	.....	.....	443	397	28	18	710	596	98	141	1,152	680	1,832	200	439	.....	60	75	38	.....	150	356	132	429	586					
University of Wisconsin	.....	.....	1,245	1,369	394	176	3,179	956	185	690	6,003	2,570	7,573	1,614	1,972	360	177	161	21	.....	498	1,281	285	2,012	1,463					
University of Wyoming	.....	84	71	64	55	1	2	120	99	33	61	354	288	689	52	300	.....	8	.....	.....	30	64	28	90	145					

[1] No report.

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TABLE 3.—*Property and income of State universities*

	Names of institutions.	Property.				
		Bound volumes in libraries.	Value of library, scientific apparatus, machinery, and furniture.	Value of grounds (including farm).	Value of buildings.	Endowment funds.
	1	2	3	4	5	6
1	Alabama Polytechnic Institute	31,000	$245,000	$30,000	$800,000	$284,509
2	Alabama Technical Institute and College for Women	7,500	80,000	16,000	650,000	353,116
3	University of Alabama	36,800	276,500	300,000	1,027,318	1,023,340
4	University of Arizona	34,000	245,900	233,000	1,171,729	10,500
5	University of Arkansas	35,300	290,000	127,000	410,000	132,686
6	University of California	505,000	3,522,104	.....	11,561,642	8,076,640
7	University of Colorado	132,459	527,000	216,550	1,500,000	80,000
8	Colorado Agricultural College	46,031	236,324	256,900	.....	271,444
9	Colorado School of Mines	16,117	315,138	84,227	456,071	.....
10	Connecticut Agricultural College	27,700	202,248	87,560	2,102,984	256,000
11	University of Delaware	28,887	258,272	354,944	1,122,695	396,605
12	University of Florida	37,000	125,000	185,000	475,000	198,000
13	Florida State College for Women	14,000	150,000	100,000	795,000	.....
14	University of Georgia	62,000	344,609	750,000	1,574,000	403,702
15	Georgia School of Technology	13,500	480,000	150,000	718,700	140,000
16	Medical College of Georgia	.....	30,000	75,000	50,000	25,000
17	North Georgia Agricultural College	4,000	10,000	30,000	110,000	.....
18	University of Hawaii	28,416	131,800	376,044	95,261	.....
19	University of Idaho	48,000	425,000	65,000	700,000	1,500,000
20	Idaho Technical Institute	5,500	36,000	95,000	290,000	.....
21	University of Illinois	456,503	2,695,512	1,083,498	5,505,131	649,012
22	Indiana University	141,648	600,000	235,000	1,465,000	780,000
23	Purdue University (Ind.)	54,000	590,000	225,000	1,725,000	445,500
24	Iowa State College of Agriculture and Mechanic Arts	85,246	1,335,268	399,377	3,202,953	693,908
25	State University of Iowa	173,000	1,811,413	608,853	3,327,732	284,889
26	University of Kansas	140,110	1,544,598	411,000	1,500,000	151,000
27	Kansas State Agricultural College	70,500	1,009,033	612,460	1,203,684	491,746
28	University of Kentucky	42,921	388,663	257,745	1,249,322	184,075
29	Louisiana State University and Agricultural and Mechanical College	51,117	332,249	357,611	588,544	318,983
30	University of Maine	70,000	301,402	14,005	718,127	218,300
31	University of Maryland	30,000	574,227	85,800	1,779,130	.....
32	Massachusetts Agricultural College	64,765	665,706	132,238	1,018,234	361,000
33	Massachusetts Institute of Technology	145,654	.....	2,639,081	8,783,352	14,902,276
34	Lowell Textile School (Mass.)	1,350	341,071	121,484	413,754	.....
35	University of Michigan	457,847	3,280,451	1,036,351	7,388,154	1,437,308
36	Michigan Agricultural College	45,080	250,000	120,000	1,300,000	.....
37	Michigan School of Mines	30,450	.....	.....	871,424	.....
38	University of Minnesota	300,000	2,943,712	2,921,917	7,078,999	4,030,917
39	Mississippi Agricultural and Mechanical College	42,328	613,907	157,520	906,950	239,787
40	Mississippi State College for Women	13,650	140,650	150,000	630,500	.....
41	University of Mississippi	31,000	100,000	50,000	1,750,000	.....
42	University of Missouri[1]	.....	.....	.....	.....	.....
43	Montana College of Agriculture and Mechanic Arts	23,125	208,142	94,523	529,145	.....
44	Montana State School of Mines	7,000	65,000	.....	265,000	.....
45	University of Montana	48,250	150,000	130,000	375,000	27,055
46	University of Nebraska	154,000	1,041,593	1,764,194	3,354,486	901,717
47	University of Nevada	35,800	184,712	110,000	526,268	339,169
48	New Hampshire College of Agriculture and Mechanic Arts	42,567	301,068	113,940	1,730,400	950,000
49	Rutgers College (N. J.)	113,000	398,500	542,800	1,182,113	1,493,034
50	University of New Mexico	30,068	121,204	200,000	355,353	82,500
51	New Mexico School of Mines	2,500	34,000	8,000	170,000	.....
52	New Mexico College of Agriculture and Mechanic Arts	19,299	304,816	39,475	318,707	.....
53	New York State Library School	(2)	.....	.....	.....	.....
54	Cornell University (N. Y.)	655,086	3,087,980	398,920	6,723,483	17,188,176
55	New York State College of Forestry	5,000	163,000	40,000	275,000	.....
56	University of North Carolina	100,172	600,000	139,060	987,990	.....
57	North Carolina College for Women	17,240	150,000	125,000	2,500,000	.....
58	North Carolina College of Agriculture and Engineering	10,000	410,795	110,073	954,449	.....
59	North Dakota Agricultural College	32,640	360,829	95,000	736,000	1,074,805

[1] Includes appropriations for experiment stations and extension work.
[2] Includes $150,000 unexpended in 1920.

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and State colleges for the fiscal year 1920–21.

Income.							Analysis of State appropriations.				
Student fees, excluding board and room rent.	From productive funds.	From the State.[1]	From United States Government.[1]	Private benefactions.	From all other sources.	Total working income.	Mill tax rate.	Receipts from mill tax.	Appropriation for current expenses.[1]	For building and permanent improvements.	
7	8	9	10	11	12	13	14	15	16	17	
$83,961	$20,280	$386,420	$204,771	$8,000	$80,000	$783,432	.....	.....	$337,045	$49,375	1
22,809	21,003	51,697	2,947	.....	16,362	114,818	.....	.....	51,697	.....	2
69,791	81,754	210,731	3,231	10,392	2,783	378,682	.....	.....	167,606	43,125	3
31,770	33,105	636,073	103,152	.....	39,455	843,555	.....	.....	484,073	152,000	4
31,294	6,903	376,723	204,231	.....	17,688	636,839	4/5	297,500	79,223	.....	5
721,012	359,799	3,119,952	174,620	1,324,245	1,008,204	6,707,832	.....	.....	3,049,264	70,688	6
160,594	6,750	560,500	.....	.....	112,497	840,341	33/100	560,500	.....	.....	7
34,960	19,165	434,480	126,734	.....	88,380	703,719	33/100	325,807	108,673	.....	8
42,366	.....	115,862	.....	.....	12,401	170,629	8/100	115,862	.....	.....	9
42,153	18,795	506,088	85,712	.....	198,408	851,156	.....	.....	345,541	160,547	10
30,238	23,668	81,841	89,810	99,066	20,004	344,627	.....	.....	79,511	2,330	11
14,196	9,940	141,516	60,000	13,000	2,692	241,344	.....	.....	141,516	.....	12
15,000	2,064	200,000	.....	.....	.....	217,064	.....	.....	122,500	77,500	13
45,005	28,524	363,173	236,829	8,937	138,609	820,577	.....	.....	358,173	5,000	14
121,666	4,000	235,400	.....	40,000	39,370	440,436	.....	.....	135,400	100,000	15
5,562	1,709	58,905	.....	.....	.....	66,146	.....	.....	58,905	.....	16
1,200	.....	30,000	.....	.....	2,000	33,200	.....	.....	30,000	.....	17
427	.....	111,141	50,000	.....	.....	161,568	.....	.....	111,141	.....	18
8,999	126,648	517,903	113,834	.....	17,386	784,770	.....	.....	457,903	60,000	19
4,270	15,000	198,000	.....	.....	750	218,020	.....	.....	153,000	45,000	20
516,630	32,451	2,526,753	291,497	.....	766,697	4,134,028	2/5	2,515,253	11,500	.....	21
196,903	49,780	751,308	.....	.....	146,736	1,144,727	33/100	637,196	114,112	.....	22
162,267	39,431	862,756	235,138	.....	359,179	1,658,771	40/100	662,756	200,000	.....	23
213,645	31,813	1,957,945	243,989	1,250	272,795	2,721,437	.....	.....	1,451,969	505,976	24
294,875	22,011	1,446,563	.....	.....	1,245,665	3,009,114	.....	.....	1,249,063	197,500	25
201,665	9,220	1,164,114	.....	.....	119,329	1,494,328	.....	.....	833,500	336,214	26
137,314	23,360	981,203	201,592	.....	389,700	1,733,169	.....	.....	891,203	90,000	27
38,227	10,356	550,987	424,238	3,850	151,982	1,179,640	1/20	365,987	80,000	105,000	28
30,632	14,556	516,698	177,848	.....	86,920	826,654	.....	.....	516,698	.....	29
131,162	12,471	294,809	123,644	1,500	141,129	704,715	.....	.....	294,809	.....	30
136,073	7,501	598,343	149,392	.....	114,715	1,006,024	.....	.....	395,343	203,000	31
9,480	10,613	861,330	115,241	.....	136,146	1,132,810	.....	.....	715,505	145,825	32
959,156	697,100	100,000	16,668	861,737	141,840	2,776,501	.....	.....	100,000	.....	33
54,342	.....	179,450	.....	.....	.....	233,792	.....	.....	175,450	4,000	34
990,487	96,686	3,018,750	15,612	164,348	921,907	5,207,790	3/5	2,193,750	.....	825,000	35
132,041	70,685	1,085,000	228,173	.....	283,027	1,798,926	1/2	[2]1,085,000	.....	.....	36
25,918	.....	90,939	.....	.....	.....	116,957	.....	.....	90,939	.....	37
711,690	115,535	3,656,498	221,942	.....	629,327	5,334,992	33/100	401,524	2,535,179	719,795	38
40,089	15,518	362,987	210,923	.....	474,160	1,103,677	.....	.....	362,987	.....	39
22,120	9,389	133,293	7,992	.....	15,553	188,347	.....	.....	133,293	.....	40
47,000	.....	509,840	.....	.....	.....	556,840	.....	.....	153,840	356,000	41
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	42
16,503	.....	439,500	112,617	.....	63,370	631,990	.....	.....	369,500	70,000	43
1,282	.....	45,000	.....	.....	.....	46,282	.....	.....	45,000	.....	44
22,128	52,381	221,955	1,600	.....	3,094	301,158	.....	.....	218,372	2,583	45
206,279	49,841	1,650,881	172,155	.....	552,269	2,631,425	1	856,297	600,629	193,955	46
25,404	15,559	166,037	96,386	6,700	33,889	343,975	4/5	156,118	9,919	.....	47
45,076	37,373	209,588	111,156	.....	183,038	586,231	.....	.....	207,088	2,500	48
94,311	80,164	249,316	148,721	200,871	.....	773,383	.....	.....	171,567	77,749	49
8,505	23,546	86,199	.....	7,922	8,484	134,656	.....	.....	86,199	.....	50
4,836	18,200	9,421	.....	.....	7,669	40,126	.....	.....	9,421	.....	51
6,096	13,900	178,398	66,168	.....	67,273	331,835	.....	.....	178,398	.....	52
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	53
1,055,603	882,618	1,353,389	266,706	1,322,776	679,798	5,560,890	.....	.....	1,333,444	19,945	54
19,234	.....	221,371	.....	.....	.....	240,605	.....	.....	221,371	.....	55
104,303	.....	465,000	.....	.....	.....	569,303	.....	.....	215,000	250,000	56
71,082	.....	403,940	.....	.....	74,640	549,662	.....	.....	157,500	246,440	57
57,178	7,500	602,637	249,470	.....	120,151	1,036,936	.....	.....	200,000	402,637	58
15,720	54,593	378,448	137,965	4,565	52,842	644,133	.....	.....	378,448	.....	59

[1] No report.
[2] Uses New York State library.

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TABLE 3.—*Property and income of State universities*

	Names of institutions.	Property.				
		Bound volumes in libraries.	Value of library, scientific apparatus, machinery, and furniture.	Value of grounds (including farm).	Value of buildings.	Endowment funds.
	1	2	3	4	5	6
60	University of North Dakota	71,000	$469,932	$128,391	$661,210	$2,000,000
61	Ohio University	52,000	401,900	550,000	1,659,667	
62	Ohio State University	221,956	1,964,988	2,151,045	3,217,134	1,058,083
63	Miami University (Ohio)	57,067	286,754	100,143	860,921	160,891
64	Oklahoma College for Women	5,898	23,800	40,000	600,000	
65	University of Oklahoma	32,600	459,050	79,201	1,470,484	3,200,000
66	Oklahoma Agricultural and Mechanical College	35,816	345,646	74,644	1,043,468	
67	Oregon State Agricultural College	57,071	649,193	553,132	1,884,662	203,384
68	University of Oregon	100,000	408,956	368,000	1,304,798	55,000
69	Pennsylvania State College	78,000	850,850	152,180	2,201,152	531,745
70	University of Porto Rico	8,200	124,200	55,900	185,650	40,000
71	Rhode Island State College	22,750	147,650	15,000	400,000	
72	Medical College of the State of South Carolina	3,500	62,966	40,000	201,800	
73	The Citadel, the Military College of South Carolina	7,000	71,357	850,000	1,018,329	
74	Clemson Agricultural College (S. C.)	28,429	601,611	354,479	1,107,565	154,439
75	University of South Carolina	65,500	247,954	945,000	594,700	
76	Winthrop College (S. C.)	23,648	429,283	460,287	1,551,052	
77	South Dakota State College of Agriculture and Mechanic Arts	80,000	96,000	667,000	125,000	975,604
78	South Dakota State School of Mines	8,000	105,000	40,000	150,000	
79	University of South Dakota	40,500	216,000	45,000	600,000	
80	University of Tennessee	42,741	399,640	971,850	1,330,863	425,000
81	University of Texas	223,368	1,640,734	1,298,333	2,494,140	10,828,028
82	Agricultural and Mechanical College of Texas	20,000	623,076	178,221	2,544,548	209,000
83	College of Industrial Arts (Tex.)	13,000	242,445	167,066	957,796	
84	Agricultural College of Utah [3]					
85	University of Utah	63,822	328,410	50,000	962,700	95,400
86	University of Vermont and State Agricultural College	96,960	230,000	100,000	1,520,000	819,786
87	Virginia Polytechnic Institute	35,000	239,992	124,207	629,159	344,312
88	University of Virginia	124,300	373,521	600,000	1,486,126	2,946,893
89	Virginia Military Institute	23,000	30,751	67,500	864,898	45,000
90	Medical College of Virginia	5,756	38,916	30,635	305,000	
91	College of William and Mary (Va.)	21,000	75,000	50,000	475,000	151,327
92	State College of Washington	80,125	498,640	221,126	1,347,493	1,168,254
93	University of Washington	132,444	748,583	1,061,250	2,190,166	7,321,581
94	West Virginia University [3]					
95	University of Wisconsin	286,000	2,222,967	2,369,808	6,682,758	722,000
96	University of Wyoming	48,000	341,500	125,000	600,000	1,118,547

[3] No report.
[3] 64.43 per cent of 28 per cent of the State levy of 2.4 mills.

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and State colleges for the fiscal year 1920–21—Continued.

Income.							Analysis of State appropriations.				
Student fees, excluding board and room rent.	From productive funds.	From the State.[1]	From United States Government.[1]	Private benefactions.	From all other sources.	Total working income.	Mill tax rate.	Receipts from mill tax.	Appropriation for current expenses.	For building and permanent improvements.	
7	8	9	10	11	12	13	14	15	16	17	
$44,909	$54,058	$337,168	.....	.....	$9,521	$445,656	.....	.....	$320,371	$16,797	60
80,305	16,859	259,970	.....	.....	41,634	398,768	.....	.....	259,970	.....	61
319,533	62,503	1,912,568	$255,913	$17,465	612,166	3,180,148	.....	.....	1,912,568	.....	62
67,995	22,766	229,965	4,772	5,358	5,996	336,852	.....	.....	229,965	.....	63
6,602	.....	174,550	1,300	.....	435	182,887	.....	.....	93,550	81,000	64
84,091	183,200	707,209	1,500	.....	.....	976,000	.....	.....	707,209	.....	65
13,903	.....	804,682	209,627	.....	109,617	1,137,829	.....	.....	689,000	115,000	66
77,560	11,272	1,469,132	124,089	.....	192,549	1,874,602	$\frac{4}{10}$	$1,244,183	224,949	.....	67
76,163	9,397	1,039,703	.....	113,269	21,258	1,259,790	$\frac{3}{10}$	847,540	838,894	113,269	68
131,260	31,020	790,044	295,817	5,000	715,396	1,968,537	.....	.....	790,044	.....	69
7,071	4,458	173,667	50,000	195	5,770	241,161	.....	.....	173,667	.....	70
10,020	2,500	147,318	91,674	.....	33,827	285,339	.....	.....	115,294	32,024	71
1,581	.....	125,592	.....	.....	.....	127,173	.....	.....	70,592	55,000	72
12,148	.....	812,055	.....	.....	12,021	836,224	.....	.....	122,757	689,298	73
13,486	9,266	352,986	187,779	.....	77,204	640,721	.....	167,505	185,481	.....	74
26,877	.....	242,855	.....	.....	25,150	294,882	.....	.....	180,355	62,500	75
55,466	.....	420,835	6,836	.....	55,601	538,738	.....	.....	295,200	125,635	76
25,902	65,206	605,540	137,279	.....	58,012	891,939	.....	.....	415,675	189,865	77
4,464	17,186	97,614	.....	.....	3,626	122,890	.....	.....	89,614	8,000	78
23,594	2,000	318,500	.....	.....	41,477	385,571	.....	.....	318,500	.....	79
119,741	24,210	292,742	221,420	60,783	145,472	864,368	$\frac{1}{2}$	214,880	77,862	.....	80
122,234	312,010	1,356,623	7,667	100,000	267,625	2,166,159	.....	.....	1,356,623	.....	81
104,289	10,450	1,412,890	323,555	1,390	415,546	2,268,120	.....	.....	946,640	466,250	82
82,054	.....	545,274	3,500	.....	80,328	711,156	.....	.....	284,674	260,600	83
											84
51,541	38,793	342,911	15,162	.....	5,197	453,604	(5)	318,050	24,861	.....	85
120,024	53,961	149,775	127,532	13,751	108,440	573,483	.....	.....	149,775	.....	86
22,353	20,659	467,528	221,085	.....	110,230	841,855	.....	.....	383,308	84,220	87
194,916	108,789	255,333	.....	228,100	206,592	993,730	.....	.....	212,833	42,500	88
42,134	5,424	127,725	.....	.....	26,790	202,073	.....	.....	127,725	.....	89
91,651	.....	45,000	.....	.....	.....	136,651	.....	.....	45,000	.....	90
23,473	8,999	243,210	.....	10,000	39,043	324,725	.....	.....	79,510	163,700	91
72,370	62,856	892,556	140,005	.....	293,597	1,461,384	(6)	364,543	353,834	174,179	92
317,687	42,642	1,624,225	3,400	.....	58,382	2,046,336	(7)	972,779	112,802	538,644	93
											94
889,736	38,885	2,541,545	231,936	37,561	706,432	4,446,095	$\frac{2}{3}$	1,714,011	500,160	327,374	95
15,557	80,811	427,760	99,577	500	14,387	638,592	$\frac{1}{2}$	202,639	75,063	150,058	96

[6] A little less than one-half of 1 mill.
[7] A little less than two-thirds of 1 mill.

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TABLE 4.—*Per cent of income of State universities and State colleges derived from the various sources, 1920–21.*

States.	From productive funds.	From United States Government, State, or city.	From private benefactions.	From student fees and other sources.	States.	From productive funds.	From United States Government, State, or city.	From private benefactions.	From student fees and other sources.
1	2	3	4	5	1	2	3	4	5
Alabama	9.6	67.3	1.5	21.6	Nebraska	1.9	69.3	.....	28.8
Arizona	3.9	87.6	.....	8.5	Nevada	4.5	76.3	2.0	17.2
Arkansas	1.1	91.2	.....	7.7	New Hampshire	6.4	54.7	.....	38.9
California	5.4	49.1	19.7	25.8	New Jersey	10.3	51.5	26.0	12.2
Colorado	1.5	72.2	.....	26.3	New Mexico	11.0	67.1	1.6	20.3
Connecticut	2.2	69.5	.....	28.3	New York	15.2	31.7	22.8	30.3
Delaware	6.9	49.8	28.7	14.6	North Carolina	.4	79.8	.....	19.8
Florida	2.6	87.6	2.8	7.0	North Dakota	10.0	78.3	.4	11.3
Georgia	2.5	67.9	3.6	26.0	Ohio	2.6	68.0	.6	28.8
Idaho	14.1	82.8	.....	3.1	Oklahoma	8.0	82.7	.....	9.3
Illinois	.8	68.2	.....	31.0	Oregon	.7	84.0	3.6	11.7
Indiana	3.2	65.9	.....	30.9	Pennsylvania	1.6	55.2	.2	43.0
Iowa	.9	63.7	.....	35.4	Rhode Island	.9	83.7	.....	15.4
Kansas	1.0	72.7	.....	26.3	South Carolina	.4	88.1	.....	11.5
Kentucky	.9	82.7	.3	16.1	South Dakota	6.0	82.8	.....	11.2
Louisiana	1.8	84.0	.....	14.2	Tennessee	2.8	59.5	7.0	30.7
Maine	1.8	59.4	.2	38.6	Texas	6.3	70.9	2.0	20.8
Maryland	.8	74.3	.....	24.9	Utah [2]	8.6	78.9	.....	12.5
Massachusetts	17.0	30.8	20.8	31.4	Vermont	9.4	48.4	2.4	39.8
Michigan	2.4	62.3	2.3	33.0	Virginia	5.8	54.4	9.5	30.3
Minnesota	2.2	72.7	.....	25.1	Washington	3.0	75.8	.....	21.2
Mississippi	1.3	66.3	.....	32.4	West Virginia	.....	.....	.....	.....
Missouri [1]	.....	.....	.....	.....	Wisconsin	.9	62.4	.8	35.9
Montana	5.3	83.8	.....	10.9	Wyoming	12.6	82.6	.1	4.7

[1] No report.

[2] University only.

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